



# ***ENTRIMA***

FOR  
**ELECTRIC UTILITIES**

# **CURRICULUM**

*COURSES, PROGRAMMES, ASSESSMENTS,  
EXERCISES, CASES & SIMULATIONS*

CONTINUOUS PROFESSIONAL DEVELOPMENT  
IS KEY FOR YOUR PERFORMANCE

## YOUR VENDOR

ENTRIMA provides Educational Services for Professionals in the Energy Markets. Our services are made available in the following ways:

- Learning Platform
- Competence Trainer (*Simulation Platform*)
- Intersession Groups (*Mentoring & Guidance*)
- Public Courses
- Customised In-company Workshops

### **Our expertise:**

It must be noted that we are NO experts in engineering and logistics, nor in physical operations, hence, courses about the technical setup of a power plant or electricity transmission converter stations do not have our primary focus, but we DO specialise in markets & trading. In other words, our proficiencies concern:

- Markets: Market structures and market working
- Products: Fossil fuels, electricity, emission rights & supply contracts
- Pricing: Price drivers, price formation and price-indexation
- Trading: Commodities & energy; physical & financial trading
- Risk: Market (price), counterparty & liquidity risk management
- Hedging: Hedging strategies and hedging tools
- Derivatives: Forwards, futures, options & swaps
- Trading ops: Deal confirmations, collateralisation, clearing, margining, settlement
- Strategies: Asset-backed trading and proprietary trading
- Flexibility: Outright, embedded & real options
- Market abuse: Inside information, prohibition of insider trading and market manipulation
- Compliance: Trade compliance and trade surveillance

In these fields we excel. Moreover, in these disciplines and domains we are considered the best around. Our study materials are also developed around these specialisations.

***Thank you for your trust and confidence.***  
*We appreciate a fruitful, long-term cooperation.*

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## **WORKSHOPS**

*IN-COMPANY (Online or On-site)*

**“FUNDAMENTALS OF POWER TRADING”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 2 sequential days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level (per individual)</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Analysis</li> <li>➤ Risk &amp; risk management</li> <li>➤ Trading operations</li> </ul>  |
| Target audience                          | All functions  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ Electricity basic concepts and terminology</li> <li>▪ Why, where, when does trading take place? How? By whom?</li> <li>▪ Trading-related documentation</li> <li>▪ Fundamentals of trading</li> <li>▪ Market players in the power trading</li> <li>▪ Structure &amp; roles in an power trading organisation</li> <li>▪ Understanding end-to-end trading process</li> <li>▪ Supply contracts and PPAs</li> <li>▪ Trading operations overview</li> <li>▪ Transmission and distribution</li> <li>▪ Risk and insurance</li> <li>▪ Compliance</li> <li>▪ Price risk management</li> <li>▪ Legal dispute avoidance and resolution</li> <li>▪ Counterparty relations</li> </ul>   |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Commodity &amp; Energy Trading”</li> <li>✓ Handout (slides)</li> </ul>  |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Electricity basic processes, concepts and terminology <ul style="list-style-type: none"> <li>○ Supply chain management</li> </ul> </li> <li>▪ Documentation <ul style="list-style-type: none"> <li>○ Supply contracts</li> <li>○ Balancing, spot &amp; forward contracts</li> <li>○ Master agreements</li> </ul> </li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>○ Deal confirmations</li> <li>○ Balancing regimes</li> <li>▪ Fundamentals of trading <ul style="list-style-type: none"> <li>○ Why, where, when, who, what? <ul style="list-style-type: none"> <li>▪ Reasons to transact</li> <li>▪ Products / contracts</li> <li>▪ OTC markets <ul style="list-style-type: none"> <li>- Bilateral agreements (legal frameworks)</li> <li>- Counterparty risk management</li> <li>- Brokerage firms &amp; their services</li> </ul> </li> <li>▪ Exchanges <ul style="list-style-type: none"> <li>- Setup &amp; organisation (membership)</li> <li>- Clearing &amp; margining</li> </ul> </li> </ul> </li> </ul> </li> </ul> <p style="margin-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>OTC trading vs. Exchange trading</i></p> <li>▪ Market players in power trading <ul style="list-style-type: none"> <li>○ Market participants &amp; their roles <ul style="list-style-type: none"> <li>▪ Producers, consumers, prosumers, system operators, traders (physical &amp; financial)</li> </ul> </li> </ul> </li> <li>▪ Structure &amp; roles in a power trading organisation <ul style="list-style-type: none"> <li>○ Front, middle &amp; back office (business, control &amp; support functions) <ul style="list-style-type: none"> <li>▪ Front office: asset &amp; portfolio management, origination, asset-backed trading, proprietary trading</li> </ul> </li> </ul> </li> <li>▪ Understanding end-to-end trading process <ul style="list-style-type: none"> <li>○ Physical &amp; financial flows</li> <li>○ Related processes <ul style="list-style-type: none"> <li>▪ Allocating, nominating, reconciling, netting, collateralisation, clearing, margining, settlement (delivery, invoicing, payment).</li> </ul> </li> </ul> </li> <li>▪ Contracts <ul style="list-style-type: none"> <li>○ Supply contract (specifications &amp; features)</li> <li>○ Power purchase agreement (PPA)</li> <li>○ Derivatives contract (types &amp; characteristics)</li> </ul> <p style="margin-left: 40px;"><b>→ CASE STUDY:</b><br/><i>Contract specifications</i></p> </li> <li>▪ Trading operations overview <ul style="list-style-type: none"> <li>○ Deal confirmation</li> <li>○ Collateralisation</li> <li>○ Nominating &amp; nomination process</li> <li>○ Delivery, utilisation and distribution</li> <li>○ Invoicing &amp; payment</li> <li>○ Dispute resolution</li> <li>○ Settlement</li> </ul> <p style="margin-left: 40px;"><b>→ EXERCISE:</b><br/><i>Define what steps have to be taken in a trading process.</i></p> <p style="margin-left: 40px;"><b>→ EXERCISE:</b><br/><i>Settlement of forward contract. What should be invoiced? When?</i></p> </li> <li>▪ Transmission <ul style="list-style-type: none"> <li>○ Balancing</li> <li>○ Balancing regime &amp; balancing responsibility</li> <li>○ Ancillary services</li> <li>○ Frequency regulation &amp; restoration</li> <li>○ Intermittency</li> <li>○ Congestion management</li> </ul> </li> |
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|         | <ul style="list-style-type: none"> <li>○ Redispatch</li> <li>▪ Risk             <ul style="list-style-type: none"> <li>○ Operational risk &amp; more</li> <li>○ Market risk</li> <li>○ Counterparty risk</li> <li>○ Liquidity risk</li> </ul> </li> <li>▪ Compliance             <ul style="list-style-type: none"> <li>○ Market regulations, financial crime, sanctioning regimes                 <ul style="list-style-type: none"> <li>▪ Money laundering, terrorist financing, tax evasion, VAT fraud, insider trading and market manipulation</li> </ul> </li> </ul> </li> <li>▪ Price risk management             <ul style="list-style-type: none"> <li>○ Risk identification (volatility, forward curve, basis risk, FX risk)</li> <li>○ Risk assessment (risk quantification, value at risk, stress tests)</li> <li>○ Risk control (liquidation, hedging)</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Value at Risk &amp; Hedging</i></li> </ul> </li> <li>▪ Legal dispute avoidance and resolution             <ul style="list-style-type: none"> <li>○ Deal confirmation, allocation, reconciliation, inspection, dispute handling, dispute resolution</li> </ul> </li> <li>▪ Counterparty relations             <ul style="list-style-type: none"> <li>○ Types of relations, entering into relations, maintaining relations, due diligence, KYC processes</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |



**“FUNDAMENTALS OF POWER MARKETS”**

*BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level (per individual)</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Interactive sessions due to exercises and case studies</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Electricity supply chain management</li> <li>➢ Contracting</li> <li>➢ Pricing</li> <li>➢ Operations</li> </ul>  |
| Target audience                          | All functions  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The fundamentals of electricity generation, storage and transmission</li> <li>▪ The essential concepts and business practices of electricity supply and consumption</li> <li>▪ Basic principles in electricity pricing and overview of power markets</li> <li>▪ Essentials elements in electricity supply contracts</li> </ul>  |
| Tutor/instructor                         | T.b.d. <small>(CWI)</small>  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Program                                  | <ul style="list-style-type: none"> <li>▪ The fundamentals of electricity generation, storage and transmission <ul style="list-style-type: none"> <li>○ Production capacity: renewables (wind, solar, hydro, biomass), fossil-fueled stations, nuclear power plants. <ul style="list-style-type: none"> <li>▪ Flexibility, baseload and swing supply</li> <li>▪ Start up/take offline</li> <li>▪ Ramp rates</li> <li>▪ Intermittancy</li> </ul> </li> </ul> </li> <li>▪ The essential concepts and business practices of electricity supply and consumption <ul style="list-style-type: none"> <li>○ Export and import, plus cross-border transmission capacity</li> <li>○ Spinning reserves</li> <li>○ Marketing &amp; sales <ul style="list-style-type: none"> <li>▪ The roles of industry bodies.</li> </ul> </li> </ul> </li> <li>▪ Fundamentals of electricity pricing <ul style="list-style-type: none"> <li>○ Nodal pricing in the US</li> <li>○ Marginal cost models in Europe</li> <li>○ The merit order</li> </ul> <p style="text-align: center;"><b>→ EXERCISE:</b><br/><i>Listing the price driving factors</i></p> </li> </ul> |

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|         | <p style="text-align: center;"><b>→ (TRADING) SIMULATION (possibly):</b><br/><i>Analyse the electricity price level and its volatility.</i></p> <ul style="list-style-type: none"> <li>○ Transmission             <ul style="list-style-type: none"> <li>▪ Cables</li> <li>▪ System operators</li> <li>▪ Balancing regimes</li> <li>▪ Congestion management</li> </ul> </li> <li>▪ Essentials elements in electricity supply contracts             <ul style="list-style-type: none"> <li>○ Contract types                 <ul style="list-style-type: none"> <li>▪ Volume flexibility, take-or-pay</li> </ul> </li> <li>○ Contract specifications                 <ul style="list-style-type: none"> <li>▪ Location, timing (delivery period)</li> <li>▪ Granularity</li> </ul> </li> </ul> </li> </ul> <p style="text-align: center;"><b>→ CASE STUDY:</b><br/><i>Analyse futures contract specifications</i></p> <ul style="list-style-type: none"> <li>▪ Basic principles in electricity pricing and overview of power markets             <ul style="list-style-type: none"> <li>○ The power term market                 <ul style="list-style-type: none"> <li><b>→ EXERCISE:</b><br/><i>Hedging the market risk relating to a power generating capacity</i></li> </ul> </li> <li>○ Market coupling initiatives                 <ul style="list-style-type: none"> <li>▪ Day ahead power auction in Europe</li> <li>▪ Flexibility                     <ul style="list-style-type: none"> <li><b>→ EXERCISE:</b><br/><i>Identify the orders a market participant would like to submit to the auction and understand why these orders will contribute to the financial performance.</i></li> </ul> </li> <li>▪ Market equilibrium                     <ul style="list-style-type: none"> <li><b>→ EXERCISE:</b><br/><i>Calculate the market clearing price</i></li> <li><b>→ (TRADING) SIMULATION (possibly):</b><br/><i>Analyse the orders by market participants and the resulting market clearing prices under various conditions.</i></li> </ul> </li> </ul> </li> <li>▪ Maintenance</li> </ul> </li> <li>○ Intra-day trading             <ul style="list-style-type: none"> <li>▪ Continuously traded market</li> </ul> </li> <li>○ Balancing market             <ul style="list-style-type: none"> <li>▪ Balancing regimes</li> <li>▪ Bid ladder</li> <li>▪ Ancillary services</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |

**“POWER TRADING ORIENTATION”**

*BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level (per individual)</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Markets</li> <li>➢ Products</li> <li>➢ Pricing</li> <li>➢ Trading</li> <li>➢ Trading operations</li> <li>➢ Concepts, processes and related terminology</li> </ul>   |
| Target audience                          | Front office, Middle office, Back office   |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The fundamentals of power markets, products, pricing and trading</li> <li>▪ Basic concepts, processes and related terminology, incl. but not limited to volatility, liquidity, derivative contracts, and spark/dark spreads</li> <li>▪ Becoming aware of the functions and tasks within a trading organisation</li> <li>▪ Becoming aware of the requirements for a trading organisation</li> <li>▪ Understand what a trader's job concerns</li> </ul>   |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Commodity &amp; Energy Trading”</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Markets <ul style="list-style-type: none"> <li>○ Market working</li> <li>○ Market / asset liquidity</li> <li>○ Wholesale vs. retail markets</li> <li>○ Physical vs. financial markets</li> <li>○ Balancing vs. spot vs. term markets (forward/future markets)</li> <li>○ Market participants <ul style="list-style-type: none"> <li>▪ Producers &amp; consumers – and their strategies</li> </ul> </li> </ul> <p style="margin-left: 40px;"><b>→ ASSIGNMENT:</b><br/><i>Identify the types of market participants</i></p> </li> <li>▪ Products <ul style="list-style-type: none"> <li>○ Physical products vs. paper trading</li> </ul> </li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>○ Supply contracts</li> <li>○ Spot &amp; term contracts</li> <li>○ Derivative contracts <ul style="list-style-type: none"> <li>▪ Futures, options, swaps and their application</li> <li>▪ Physical delivery vs cash settlement</li> </ul> </li> <li>▪ Pricing <ul style="list-style-type: none"> <li>○ Fixed prices vs. floating prices</li> <li>○ Price-indexation</li> <li>○ Bid-ask spread</li> <li>○ Price volatility</li> <li>○ Price correlation</li> </ul> <p style="margin-left: 20px;">→ <b>ASSIGNMENT:</b><br/><i>Define volatility</i></p> </li> <li>▪ Trading <ul style="list-style-type: none"> <li>○ Deal-making, contracting, decision-making process</li> <li>○ Analysis <ul style="list-style-type: none"> <li>▪ Fundamental</li> <li>▪ Technical</li> <li>▪ Quantitative</li> <li>▪ Psychological</li> </ul> <p style="margin-left: 20px;">→ <b>TRADING SIMULATION:</b><br/><i>Act in the capacity of a trader or market analyst and analyse the market (price) on the basis of news items that appear.</i></p> </li> <li>○ Why to transact? <ul style="list-style-type: none"> <li>▪ Physical reasons</li> <li>▪ Financial reasons</li> </ul> <p style="margin-left: 20px;">→ <b>TRADING SIMULATION:</b><br/><i>Act in the capacity of proprietary trader and make as much money as you can in the power futures market.</i></p> </li> <li>○ Where to transact? <ul style="list-style-type: none"> <li>▪ Exchange-trading vs. bilateral deal-making <ul style="list-style-type: none"> <li>• Brokerage services</li> <li>• Clearing</li> <li>• Collateralisation &amp; margining</li> <li>• Cost structures</li> </ul> </li> </ul> <p style="margin-left: 20px;">→ <b>EXERCISE:</b><br/><i>Calculate the capital requirements</i></p> </li> <li>○ Who is transacting? <ul style="list-style-type: none"> <li>▪ Types of market participants and their role</li> <li>▪ Types of traders</li> </ul> </li> <li>○ When to transact? <ul style="list-style-type: none"> <li>▪ Optimisation of the right moment to transact (timing)</li> </ul> </li> <li>○ How to transact? <ul style="list-style-type: none"> <li>▪ Off-venue: Bilateral negotiations</li> <li>▪ On-venue: Central order book</li> </ul> <p style="margin-left: 20px;">→ <b>TRADING SIMULATION:</b><br/><i>Check best bid and offer, the bid-ask spread, and market depth. Next, initiate an order and execute an order by order aggression.</i></p> </li> </ul> </li> <li>▪ Organisational structure <ul style="list-style-type: none"> <li>○ Business functions, control functions, support functions</li> <li>○ Front, middle &amp; back office, plus their functions &amp; roles</li> <li>○ How are traders being controlled and supported?</li> <li>○ What procedures, mandates, limits and tools are available?</li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Finance             <ul style="list-style-type: none"> <li>○ Funding liquidity (the financing of trading activity)</li> <li>○ Accounting &amp; book keeping</li> <li>○ Account structure (setup of accounts/books)</li> <li>○ Internal transfers &amp; internal transfer pricing</li> <li>○ M-to-M valuation &amp; results</li> <li>→ <b>EXERCISE:</b><br/><i>Calculate the realised &amp; unrealised results on a position</i></li> </ul> </li> <li>▪ Risk management             <ul style="list-style-type: none"> <li>○ Risk identification, risk assessment, risk reporting and risk control                 <ul style="list-style-type: none"> <li>▪ Risk vs uncertainty                     <ul style="list-style-type: none"> <li>→ <b>ASSIGNMENT:</b><br/><i>Define the differentials between risk and uncertainty</i></li> </ul> </li> <li>▪ Types of trading-related risk                     <ul style="list-style-type: none"> <li>• Market risk</li> <li>• Counterparty risk</li> <li>• Liquidity risk</li> <li>• Operational risk</li> </ul> </li> <li>▪ Risk quantification:                     <ul style="list-style-type: none"> <li>• Value at Risk</li> <li>• Stress testing</li> </ul> </li> <li>→ <b>EXERCISE:</b><br/><i>Calculate the risk exposure of a position</i></li> <li>▪ Risk procedures, mandates and limit structures</li> <li>▪ Scenario analysis vs. sensitivity analysis</li> </ul> </li> <li>▪ Market regulations &amp; Compliance             <ul style="list-style-type: none"> <li>○ Transparency</li> <li>○ Market integrity</li> <li>○ Derivatives</li> <li>○ Export/import restrictions</li> <li>○ Price corridors, price limits</li> <li>→ <b>CASE STUDY:</b><br/><i>Sanctioning - Jurisprudence</i></li> </ul> </li> </ul> </li></ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |

**“OVERVIEW OF DERIVATIVE MARKET OPERATIONS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Derivative contracts</li> <li>➢ Position management</li> <li>➢ Portfolio optimisation</li> <li>➢ Trading operations</li> <li>➢ Clearing</li> <li>➢ Settlement</li> </ul>   |
| Target audience                          | Back office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Trading operations, including but not limited to deal confirmation, allocation, reconciliation, clearing, settlement, invoicing, payments</li> <li>▪ Collateralisation and credit support re OTC-traded forward contracts</li> <li>▪ Margining processes regarding futures and option contracts</li> <li>▪ Settlement processes regarding futures and forward contracts, swaps and options</li> <li>▪ Physical delivery and cash settlement</li> </ul>  |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Clearing &amp; Settlement”</li> <li>✓ Trading Simulation Platform: access to run trading simulation <ul style="list-style-type: none"> <li>- Sim “Futures - at position level”</li> <li>- Sim “Futures - at portfolio level”</li> <li>- Sim “Power – Location spread”</li> <li>- Sim “Power – Time spread”</li> </ul> </li> <li>✓ Excel file showing the financial performance of a term contract position</li> <li>✓ Excel file showing the financial performance of an option position</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Administrative processes <ul style="list-style-type: none"> <li>○ Explaining the back office tasks &amp; responsibilities</li> <li>○ About invoicing &amp; payments; accounts payable &amp; receivable</li> <li>○ Concerning nomination, allocation &amp; reconciliation</li> </ul> </li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>▪ Straight through processing <ul style="list-style-type: none"> <li>○ The deal life cycle; from deal capture &amp; confirmation to delivery, incl. clearing, margining &amp; collateralisation and settlement</li> </ul> </li> <li>▪ End-of-day processes <ul style="list-style-type: none"> <li>○ About daily (or periodic) reporting; End-of-day/month/year</li> <li>○ Covering position reports, P/L statements &amp; performance management</li> </ul> </li> <li>▪ Clearing <ul style="list-style-type: none"> <li>○ Counterparty (credit) risk</li> <li>○ The aftermath of the global financial crisis 2008-2009 <ul style="list-style-type: none"> <li>▪ Lehman Brothers bankruptcy &amp; The Credit Crisis</li> <li>▪ G-20 meeting in Pittsburg</li> <li>▪ Regulations (e.g. the US Dodd-Frank Act)</li> </ul> </li> <li>→ <b>CASE STUDY:</b><br/> <i>The EU regulation EMIR sets rules for clearing and central counterparties.</i> </li> <li>○ What is clearing? Which clearing activities take place?</li> <li>○ Novation</li> <li>○ Central counterparty clearing</li> <li>○ OTC-cleared</li> <li>○ Central counterparty &amp; Clearing members</li> <li>○ Brokers &amp; OTC give up services</li> <li>○ Default fund</li> </ul> </li> <li>▪ Margining <ul style="list-style-type: none"> <li>○ The process of margining <ul style="list-style-type: none"> <li>▪ Types of margin <ul style="list-style-type: none"> <li>• Initial margin – to cover potential loss during close-out phase</li> <li>• Variation margin – to cover unrealised loss on contract</li> <li>• Maintenance margin</li> </ul> </li> <li>▪ Margin call</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Setup a long or short futures position and analyse the margin requirements you will face on the basis of market dynamics.</i> </li> <li>▪ Cross-margin</li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Setup a futures spread position (spark spread / time spread / location spread) and analyse the margin requirements you will face. Explain the result. What are the consequences of long-short positions? What role does price correlation play?</i> </li> <li>○ Concerning correlation, haircut &amp; cross-margin</li> <li>○ Covering discounts or reduction on deposits</li> </ul> </li> <li>▪ Netting <ul style="list-style-type: none"> <li>○ Covering the concept of netting <ul style="list-style-type: none"> <li>▪ Offsetting opposing volumes and/or values</li> </ul> </li> <li>○ Bilateral &amp; multilateral netting <ul style="list-style-type: none"> <li>▪ Master agreements &amp; counterparty credit risk</li> <li>▪ Central counterparty (CCP)</li> </ul> </li> <li>→ <b>EXERCISE:</b><br/> <i>Consider numerous transactions you entered into and Determine your netted position and exposure in case of bilateral netting and in case of multilateral netting.</i> </li> <li>○ Types of netting</li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Netting by novation</li> <li>▪ Close-out netting</li> <li>▪ Settlement netting</li> <li>▪ Settlement             <ul style="list-style-type: none"> <li>○ Settlement processes in general                 <ul style="list-style-type: none"> <li>▪ Delivery versus payment</li> <li>▪ Invoicing</li> </ul> </li> <li>○ Settlement of derivatives                 <ul style="list-style-type: none"> <li>▪ Settlement of futures                     <ul style="list-style-type: none"> <li>• Settlement procedures; settlement period</li> <li>• Physical delivery vs. cash settlement</li> <li>• Cascading</li> <li>• Monthly invoicing &amp; payments</li> <li>• Gradual release of margin deposits</li> </ul> </li> <li>▪ Settlement of options                     <ul style="list-style-type: none"> <li>• Exercise &amp; assignment</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Setup a long option position and decide at maturity (end-of-sim) whether you would like to exercise your right. If so, what will happen to your position?</i></li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Setup a short option position and analyse at maturity (end-of-sim) whether you expect to be assigned. If so, what will happen to your position?</i> <ul style="list-style-type: none"> <li>• Plain vanilla options vs. exotic options                             <ul style="list-style-type: none"> <li>○ Physical delivery vs cash settlement</li> <li>○ Underlying asset: commodity or futures contract</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Settlement of swaps                     <ul style="list-style-type: none"> <li>• Averaging (monthly)</li> <li>• Fixed-for-floating swaps</li> <li>• Floating-for-floating swaps</li> <li>→ <b>EXERCISE:</b><br/><i>Hedge an exposure whereby you work for a power supplier who gets supplied electricity by a producer at a fixed price, while receiving floating from clients. Next, calculate what will be the overall result at maturity of the swap?</i></li> </ul> </li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation   |



## “POWER TRADING OPERATIONS & MARKET RISK MANAGEMENT”

BESPOKE IN-COMPANY WORKSHOP – In English language

|  |   |
|--|---|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading operations</li> <li>➤ Risk management</li> <li>➤ Hedging &amp; hedging instruments</li> <li>➤ Pricing</li> </ul>   |
| Target audience                          | All functions   |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The logistics of global maritime transportation, pipelines, storage and distribution of crude and refined products</li> <li>▪ The understanding the pricing dynamics, benchmarks of crude oil and refined products in the global markets</li> <li>▪ The price-risk management techniques using the hedging instruments such as futures and forward contracts, swaps and options</li> </ul>   |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Trading Simulation Platform: access to run trading simulation <ul style="list-style-type: none"> <li>- Sim “Power – Location spread”</li> <li>- Sim “Power – Time spread”</li> </ul> </li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Programme                                | <ul style="list-style-type: none"> <li>▪ The logistics of transmission and storage of electricity <ul style="list-style-type: none"> <li>○ Transport <ul style="list-style-type: none"> <li>▪ Transmisison cables (system operators, congestion, curtailment, balancing)</li> <li>▪ Manage supply-demand differences between 2 locations<br/>→ <b>EXERCISE:</b><br/><i>Indicate the flexibility in and value of a transport facility or contract. Valuate such flexibility in words.</i></li> </ul> </li> <li>○ Storage <ul style="list-style-type: none"> <li>▪ Battery energy storage system (BESS)</li> <li>▪ Features of relevance</li> <li>▪ Manage supply-demand differentials at 2 moments<br/>→ <b>EXERCISE:</b></li> </ul> </li> </ul> </li> </ul>   |

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|  | <p><i>Identify the flexibility in and value of a storage facility or contract.</i></p> <ul style="list-style-type: none"> <li>○ Distribution <ul style="list-style-type: none"> <li>▪ Marketing &amp; sales</li> <li>▪ Wholesale vs. retail channels</li> </ul> </li> <li>▪ The understanding the pricing dynamics, benchmarks of crude oil and refined products in the global markets <ul style="list-style-type: none"> <li>○ Price-indexation <ul style="list-style-type: none"> <li>▪ Indices (exchanges &amp; price reporting agencies)</li> <li>▪ Benchmarks</li> </ul> </li> <li>○ Exchanges: <ul style="list-style-type: none"> <li>▪ EEX, ICE, EPEX Spot, Nord Pool</li> <li>→ <b>CASE STUDY:</b><br/><i>Assess specifications and implication of:</i><br/>- Power France futures contract (Cal vs. Q vs. M)<br/>- Phelix futures contract</li> </ul> </li> </ul> </li> <li>▪ The price-risk management techniques using the hedging instruments such as futures and forward contracts, swaps and options <ul style="list-style-type: none"> <li>○ Hedging <ul style="list-style-type: none"> <li>▪ The concept explained</li> <li>▪ Just market (price) risk, not other risks</li> </ul> </li> <li>○ Hedging strategies <ul style="list-style-type: none"> <li>▪ Value hedge, volume hedge, proxy hedge, cross-commodity hedge</li> <li>→ <b>EXERCISE:</b><br/><i>Calculate the volume and/or number of contracts being transacted to hedge value-wise, to hedge volume-wise and in case of beta-hedging or proxy-hedging.</i></li> </ul> </li> <li>○ Hedging tools <ul style="list-style-type: none"> <li>▪ Forward, futures, swap and option contracts</li> <li>▪ Their characteristics</li> <li>▪ Their application</li> <li>▪ Differences between forwards and futures</li> <li>→ <b>EXERCISE:</b><br/><i>Analyse P&amp;L and pay-off structures of futures contracts &amp; option positions.</i></li> <li>→ <b>EXERCISE:</b><br/><i>Hedging fixed and floating cash flows with a swap agreement.</i></li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Power – Location spread (hedging transport capacity)</i></li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Power – Time spread (hedge battery en. storage system – BESS)</i></li> <li>▪ Settlement</li> <li>▪ Power derivatives <ul style="list-style-type: none"> <li>- Forward contracts</li> <li>- Futures contracts</li> <li>- Contracts for difference (CFDs)</li> <li>- Option contract</li> </ul> </li> <li><b>CASE:</b><br/><i>OTC-traded forwards.</i></li> <li><b>CASE:</b><br/><i>Power futures (exchange-listed contracts) and their contract specifications.</i></li> <li><b>SIMULATION &amp; EXERCISE:</b></li> </ul> </li> </ul> </li> </ul> |
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## CURRICULUM

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|         | <i>Price a power option, Black-76 model, Binomial model, Monte Carlo simulation.</i> |
| Options | Further tailoring for in-house delivery is possible                                  |
| Level   | Foundation level   |

**“TRADING PROCESS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Trading operations</li> <li>➤ Risk management</li> </ul>  |
| Target audience                          | Front office, Middle office, Back office  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The trading organisation – The role of Front, Middle &amp; Back offices</li> <li>▪ Defining the trading strategy</li> <li>▪ Analysing the market for opportunities</li> <li>▪ Deal negotiations</li> <li>▪ Deal execution</li> <li>▪ Recording the deal</li> <li>▪ Physical &amp; paper deals</li> <li>▪ Follow up</li> <li>▪ Operational aspects of trading process</li> <li>▪ Apply strategic portfolio management techniques</li> <li>▪ Apply investment analysis</li> <li>▪ Comprehensive technical understanding of the trading deal life cycle, including: <ul style="list-style-type: none"> <li>○ Order initiation and execution</li> <li>○ Initial trade capture and revisions</li> <li>○ Terminations</li> <li>○ Trade compressions</li> <li>○ Trade validations, enrichments and confirmation</li> <li>○ Ability to analyse transaction reporting</li> <li>○ In-depth understanding of how to conduct trade settlement, instructions, failures and reconciliations</li> </ul> </li> </ul> |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Commodity &amp; Energy Trading”</li> <li>✓ Trading Simulation Platform: access to run trading simulation <ul style="list-style-type: none"> <li>- Sim “Power – Spark spread”</li> <li>- Sim “Futures – At portfolio level”</li> </ul> </li> </ul>  |

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|                | <ul style="list-style-type: none"> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| <p>Program</p> | <ul style="list-style-type: none"> <li>▪ The trading organisation – The role of Front, Middle &amp; Back offices             <ul style="list-style-type: none"> <li>○ The business function (the trading function) – Roles &amp; responsibility</li> <li>○ The control functions – Roles &amp; responsibilities</li> <li>○ The support functions – Roles &amp; responsibilities                 <ul style="list-style-type: none"> <li>▪ The interactions between FO-MO-BO</li> <li>▪ The trade &amp; risk management system used by all functions</li> </ul> </li> </ul> </li> <li>▪ Defining the trading strategy             <ul style="list-style-type: none"> <li>○ Asset-backed trading plan</li> <li>○ Hedging strategies</li> <li>○ Proprietary trading strategies                 <ul style="list-style-type: none"> <li>▪ Mandates</li> <li>▪ Limits</li> </ul> </li> </ul> </li> <li>▪ Analyzing the market for opportunities             <ul style="list-style-type: none"> <li>○ Price volatility level</li> <li>○ Price level analysis</li> <li>○ Spread analysis                 <ul style="list-style-type: none"> <li>▪ Spread level</li> <li>▪ Spread level volatility                     <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Analyse the spark spreads of 3 different gas-fired power plants, each with its own specific energy-efficiency and carbon-intensity.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Deal negotiations             <ul style="list-style-type: none"> <li>○ Product definition</li> <li>○ Structuring may bring components including flexibility</li> <li>○ Pricing                 <ul style="list-style-type: none"> <li>▪ Commodity cost</li> <li>▪ Transport conditions</li> <li>▪ Transport cost</li> <li>▪ Proposal validity premium</li> <li>▪ Volume risk premium</li> <li>▪ Profit margin                     <ul style="list-style-type: none"> <li>→ <b>ASSIGNMENT:</b></li> <li><i>Identify/define the components of the overall price that will be charged.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Deal execution             <ul style="list-style-type: none"> <li>○ Order matching</li> <li>○ Central order book                 <ul style="list-style-type: none"> <li>▪ Order types</li> <li>▪ Partial fills</li> </ul> </li> </ul> </li> <li>▪ Recording the deal             <ul style="list-style-type: none"> <li>○ Recording conversations by phone / squawk box, logging emails, logging chats, social media coverage                 <ul style="list-style-type: none"> <li>▪ Dispute resolution</li> <li>▪ Trade surveillance (market abuse prevention &amp; detection)                     <ul style="list-style-type: none"> <li>→ <b>ASSIGNMENT:</b></li> <li><i>Define what details are relevant in a conversation.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Physical &amp; paper deals             <ul style="list-style-type: none"> <li>○ Physical deals                 <ul style="list-style-type: none"> <li>▪ Bilateral trading process</li> <li>▪ Settlement</li> <li>▪ Logistics (incl. nominations)</li> </ul> </li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>○ Paper deals <ul style="list-style-type: none"> <li>▪ Term contracts</li> <li>▪ Physical delivery vs. Cash settlement</li> <li>▪ Churn positions</li> <li>▪ Settlement</li> </ul> </li> <li>→ <b>CASE STUDY:</b><br/> <i>Compare a cash settled futures contract with a contract for physical delivery and explain how settlement of each takes place.</i></li> <li>▪ Follow up <ul style="list-style-type: none"> <li>○ Position management (collateralisation/margining)</li> <li>○ Position change (liquidation, netting)</li> <li>○ Settlement</li> </ul> </li> <li>▪ Operational aspects of trading process <ul style="list-style-type: none"> <li>○ Pre-trade checks &amp; controls</li> <li>○ Post-trade checks &amp; controls</li> <li>○ ICT settings</li> <li>○ Software</li> </ul> </li> <li>▪ Apply strategic portfolio management techniques <ul style="list-style-type: none"> <li>○ Opposing long and short positions <ul style="list-style-type: none"> <li>▪ Netting of volume – Process value/price differentials</li> </ul> </li> <li>○ Cross-commodity positions <ul style="list-style-type: none"> <li>▪ Price correlation effects</li> </ul> </li> <li>○ Risk offsets <ul style="list-style-type: none"> <li>▪ Value at risk mitigation</li> <li>▪ Cross-margin</li> </ul> </li> </ul> </li> <li>▪ Apply investment analysis <ul style="list-style-type: none"> <li>○ Risk-reward analysis</li> <li>○ Rate of return (yield) analysis <ul style="list-style-type: none"> <li>▪ Financial performance</li> <li>▪ Maximum value at risk having been exposed to</li> <li>▪ Risk-adjusted returns</li> <li>▪ Maximum working capital used</li> </ul> </li> </ul> </li> <li>▪ Comprehensive technical understanding of the trading deal life cycle, including: <ul style="list-style-type: none"> <li>○ Order initiation and execution <ul style="list-style-type: none"> <li>▪ Order submission</li> <li>▪ Order matching - Conclusion of transaction</li> <li>▪ The resulting obligation or right</li> </ul> </li> <li>○ Initial trade capture and revisions <ul style="list-style-type: none"> <li>▪ Deal capture in trading &amp; risk management system</li> <li>▪ Adjustments</li> </ul> </li> <li>○ Terminations <ul style="list-style-type: none"> <li>▪ Failure (non-/late-delivery, non-/late-payment)</li> <li>▪ Force majeure</li> </ul> </li> <li>○ Trade compressions <ul style="list-style-type: none"> <li>▪ Bilateral netting</li> <li>▪ Netting by novation</li> <li>▪ Close-out netting</li> <li>▪ Settlement netting (BNSS, MNSS)</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Analyse the spark spread of various power plants</i></li> <li>○ Trade validations, enrichments and confirmation <ul style="list-style-type: none"> <li>▪ Order matching process (check membership, check margin)</li> </ul> </li> </ul> </li> </ul> |
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CURRICULUM

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|         | <ul style="list-style-type: none"> <li>account, check order book priority)             <ul style="list-style-type: none"> <li>▪ Deal confirmation</li> <li>▪ Manifest error clauses (obvious error, erroneous deal)</li> <li>▪ Deal cancellation</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Enter into a futures position and monitor the margin calls that are claimed by the clearing organisation.</i> </li> <li>○ Ability to analyze transaction reporting             <ul style="list-style-type: none"> <li>▪ Transaction report (position statement, portfolio overview))</li> <li>▪ Details (product, transaction price, volume, M-to-M value, M-to-M result)</li> </ul> </li> <li>○ In-depth understanding of how to conduct trade settlement, instructions, failures and reconciliations             <ul style="list-style-type: none"> <li>▪ Recording squawk box / telephone conversations</li> <li>▪ Deal-making</li> <li>▪ Deal confirmation &amp; check</li> <li>▪ Dispute resolution (talk to trader or to counterparty?)</li> <li>▪ Re-confirmation</li> <li>▪ Settlement check (delivered quality/grade, volume)</li> <li>▪ Invoice check (price and quantity)</li> <li>▪ Reference price check (settlement price, index, marker)</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Advanced  |

**“PRICING ANALYSIS” – DERIVATIVE CONTRACTS & OPTION STRATEGIES***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 4 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Risk</li> <li>➤ Pricing</li> <li>➤ Options</li> </ul>  |
| Target audience                          | Front office staff, Middle office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Recognise the issues with supply-demand imbalance and price volatility for electricity</li> <li>▪ Understand the price risk management and measuring risk</li> <li>▪ In-depth understanding of the technical innovations, challenges &amp; economic factors that influence electricity pricing</li> <li>▪ Price discovery on physical markets</li> <li>▪ Price discovery on paper markets</li> <li>▪ Refining economics, impact on trading</li> <li>▪ Trading economics, impact on trading strategy</li> <li>▪ Arbitrage and pricing in different regions</li> <li>▪ Price reporting agencies and role of published prices</li> <li>▪ Implementation of pricing analysis in daily business</li> <li>▪ Technical understanding of key options strategies, valuation and hedging</li> <li>▪ Ability to identify and implement the uses of options in equity, FX and interest rate markets</li> <li>▪ Understand the mechanics of option pricing and valuation</li> <li>▪ Design trading strategies using a combination of options</li> <li>▪ Apply and use options (caps, floors) and swaptions</li> <li>▪ Learn techniques to build and price sophisticated structured products</li> </ul> |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Options”</li> <li>✓ Excel file: “Black &amp; Scholes option valuation model”</li> <li>✓ Excel file: “Financial performance of futures position”</li> <li>✓ Excel file: “Financial performance of option position”</li> <li>✓ Trading Simulation Platform: access to run trading simulation<br/>- Sim “Power – Location spread”</li> </ul>  |



|                  |   |
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|                  | <ul style="list-style-type: none"> <li>- Sim "Options – Arbitrage &amp; Synthetics"</li> <li>- Sim "Options – Strategies"</li> <li>- Sim "Options – The Greeks"</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| <p>Programme</p> | <ul style="list-style-type: none"> <li>▪ Recognise the issues with supply-demand imbalance and price volatility for electricity             <ul style="list-style-type: none"> <li>○ A local surplus or deficit, or congestion, result in a price impact</li> <li>○ The potential threat of a penalty causes price impact, leading to dynamic prices and dynamic price differentials</li> <li>○ Transport route disruptions and their market impact</li> <li>→ <b>CASE STUDY:</b><br/><i>Congestion due to excess wind power generation.</i></li> <li>○ Price volatility analysis</li> <li>○ Spread volatility analysis</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Location spread trading and analysis.</i></li> </ul> </li> <li>▪ Understand the price risk management and measuring risk             <ul style="list-style-type: none"> <li>○ Risk identification, risk assessment, and risk control</li> <li>○ Risk quantification                 <ul style="list-style-type: none"> <li>▪ Probability distribution                     <ul style="list-style-type: none"> <li>- Distribution curves</li> <li>- Skewness</li> <li>- Positive &amp; negative skew</li> <li>- The relation to price volatility</li> </ul> </li> <li>▪ Value at risk                     <ul style="list-style-type: none"> <li>- Methods                         <ul style="list-style-type: none"> <li>- Parametric approach                             <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b><br/><i>Calculate the value at risk of a long power position (price zone 1) considering a 95% confidence level and a 1-day time horizon. Do the same for a given short power futures position (price zone 2), considering identical conditions. Calculate the value at risk of the combined portfolio considering a price correlation between the price zones of +0.84. Explain the concept of cross-margining in case of clearing.</i></li> </ul> </li> <li>- Historical simulation approach</li> <li>- Monte Carlo Simulation                             <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b><br/><i>Calculate the value at risk of a position considering a 95% and a 99% confidence level based on some assumption made.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>- Disadvantages or features of each methodology                     <ul style="list-style-type: none"> <li>- Handling skew</li> <li>- Underestimation of tail risk</li> <li>- Know how, expertise</li> <li>- Computing power</li> <li>- Complexity</li> <li>- Optionality in portfolio</li> <li>- Correlation coefficients</li> </ul> </li> </ul> </li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>○ Risk controls <ul style="list-style-type: none"> <li>▪ Mandates</li> <li>▪ Limit settings</li> <li>▪ Pre-trade controls</li> <li>▪ Post-trade controls</li> <li>▪ Hedging</li> <li>▪ Strategies</li> </ul> <p>→ <b>EXERCISE:</b><br/><i>Compare different approaches to hedge &amp; their outcomes.</i></p> </li> <li>▪ In-depth understanding of the technical innovations, challenges &amp; economic factors that influence power pricing <ul style="list-style-type: none"> <li>○ Energy transition <ul style="list-style-type: none"> <li>▪ Renewable resources (wind, solar, hydro)</li> </ul> </li> <li>○ Climate policy <ul style="list-style-type: none"> <li>▪ The Paris Agreement</li> <li>▪ Emission Trading Systems</li> <li>▪ Voluntary carbon credits</li> <li>▪ Energy transition &amp; the substitution effect</li> </ul> <p>→ <b>EXERCISE:</b><br/><i>The impact of emission rights on the gross operational margin of power plants.</i></p> </li> <li>○ Economic growth <ul style="list-style-type: none"> <li>▪ The relation between GDP and per capita use</li> </ul> </li> </ul> </li> <li>▪ Price discovery on physical markets <ul style="list-style-type: none"> <li>○ Price reporting agencies</li> <li>○ The role of published prices</li> </ul> </li> <li>▪ Price discovery on paper markets <ul style="list-style-type: none"> <li>○ Exchanges provide price transparency <ul style="list-style-type: none"> <li>▪ Transaction prices (last, high, low)</li> <li>▪ Indices &amp; settlement prices</li> </ul> </li> <li>○ Market data sales</li> </ul> <p>→ <b>CASE STUDY:</b><br/><i>Analyse an index or settlement calculation procedure</i></p> </li> <li>▪ Refining economics, impact on trading <ul style="list-style-type: none"> <li>○ Impact of spark/dark spread level on trading activity</li> <li>○ Asset-backed trading strategy <ul style="list-style-type: none"> <li>▪ Linear hedging</li> <li>▪ Outperforming market</li> </ul> </li> </ul> </li> <li>▪ Trading economics, impact on trading strategy <ul style="list-style-type: none"> <li>○ Market liquidity impacting choices for which contract to select</li> <li>○ A funding liquidity change influences trading behaviour – Why/how?</li> <li>○ Price correlation changes impacting trading choices <ul style="list-style-type: none"> <li>▪ Hedging strategy alternation</li> </ul> </li> </ul> </li> <li>▪ Arbitrage and pricing in different regions <ul style="list-style-type: none"> <li>○ Arbitrage process &amp; requirements <ul style="list-style-type: none"> <li>▪ Timing – unwinding vs. settlement</li> </ul> </li> </ul> </li> <li>▪ Implementation of pricing analysis in daily business <ul style="list-style-type: none"> <li>○ Fundamental analysis</li> <li>○ Technical analysis</li> <li>○ Quantitative analysis</li> <li>○ Psychological analysis</li> <li>○ Combining the methodologies</li> </ul> </li> <li>▪ Technical understanding of key options strategies, valuation and hedging <ul style="list-style-type: none"> <li>○ Moneyness</li> </ul> </li> </ul> |
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|  | <ul style="list-style-type: none"> <li>▪ In-the-money, at-the-money, out-of-the-money</li> <li>▪ Intrinsic &amp; extrinsic value (time &amp; expectations value)</li> <li>○ Volatility       <ul style="list-style-type: none"> <li>▪ What is implied volatility?</li> <li>▪ Skewness in price formation – differences per strike</li> </ul> </li> <li>○ Delta &amp; Delta-hedging       <ul style="list-style-type: none"> <li>▪ Delta – sensitivity of the option premium relating to a price change of the underlying asset</li> <li>▪ Delta as hedge ratio           <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>How to monetise on the intrinsic value of an ITM option?</i></li> <li><i>What scenarios are possible and what are the pros &amp; cons?</i></li> </ul> </li> <li>▪ Gamma as second order derivative           <ul style="list-style-type: none"> <li>- Dynamic hedging</li> </ul> </li> </ul> </li> <li>▪ Ability to identify and implement the uses of options in equity, FX and interest rate markets       <ul style="list-style-type: none"> <li>○ Types of options, characteristics of option, applications of options in the markets</li> </ul> </li> <li>▪ Understand the mechanics of option pricing and valuation       <ul style="list-style-type: none"> <li>○ Price driving factors (contract-specific &amp; market-specific)</li> <li>○ Option valuation models, their assumption &amp; limitations           <ul style="list-style-type: none"> <li>▪ Black &amp; Scholes               <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Trade options and see the value change upon a price change of the underlying asset</i></li> </ul> </li> <li>▪ Black-76</li> <li>▪ Binomial tree model ((e.g. Cox-Ross-Rubinstein)               <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the value of a call option with a binomial tree</i></li> </ul> </li> <li>▪ Monte Carlo Simulations (MCS)               <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Calculate the value of a power option with MCS</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Design trading strategies using a combination of options       <ul style="list-style-type: none"> <li>○ Option strategies – Features, risk-reward profiles &amp; break-even points           <ul style="list-style-type: none"> <li>▪ Call/put spread</li> <li>▪ Straddle &amp; strangle</li> <li>▪ Butterfly &amp; condor</li> <li>▪ (Zero-cost) collar</li> <li>▪ Ratio spread</li> <li>▪ Synthetic option positions (options, possibly with future)               <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Setup an option strategy and analyse the risk parameters (Greeks: Delta, Gamma, Vega, Theta, Rho) and interpret what this means + determine how these can be managed).</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Apply and use bond options, caps, floors, and swaptions       <ul style="list-style-type: none"> <li>○ Option strategies           <ul style="list-style-type: none"> <li>▪ Cap – maximum purchase price</li> <li>▪ Floor – minimum sales price               <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Hedge an outright physical short (long) position with a long call (put) position.</i></li> </ul> </li> </ul> </li> <li>○ Credit default swap (CDS)           <ul style="list-style-type: none"> <li>▪ A put option on a defaulting bond</li> </ul> </li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Periodic premium payments</li> <li>▪ Ratings &amp; swap rates</li> <li>▪ Default handling</li> <li>○ Valuation of a CDS             <ul style="list-style-type: none"> <li>▪ European swaption</li> <li>▪ Bermudan swaption</li> <li>▪ American swaptions</li> </ul> </li> <li>▪ Learn techniques to build and price sophisticated structured products             <ul style="list-style-type: none"> <li>○ Securitisation &amp; commoditisation</li> <li>○ Synthetics</li> <li>○ Embedded structures                 <ul style="list-style-type: none"> <li>▪ Enclosed optionality</li> <li>▪ Hidden premiums</li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Advanced   |

**“MARKET RISK & ANALYSIS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Pricing</li> <li>➤ Risk, risk management</li> <li>➤ Analysis</li> </ul>  |
| Target audience                          | Front office staff, Middle office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Fundamental and technical analysis</li> <li>▪ Using market analysis to inform trading decisions</li> <li>▪ Different types of market risk</li> <li>▪ Market risk identification</li> <li>▪ Market rules and market regulations</li> <li>▪ Understanding cross-commodity risk</li> <li>▪ Comprehend the risks and rewards of the option market, understand volatility and maximise trading opportunities</li> <li>▪ Understand market risk reporting requirements</li> <li>▪ Stress testing and scenario analysis</li> <li>▪ Risk reporting</li> </ul>   |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Value at risk”</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Fundamental and technical analysis <ul style="list-style-type: none"> <li>○ Price driving factors <ul style="list-style-type: none"> <li>▪ STEEPLED analysis</li> </ul> </li> <li>○ Charting (support &amp; resistance lines, continuation &amp; reverse patterns, moving average) <ul style="list-style-type: none"> <li>▪ Combining the approaches to optimise timing</li> <li>▪ Compare with quantitative &amp; psychological analysis</li> </ul> </li> </ul> </li> <li>▪ Using market analysis to inform trading decisions <ul style="list-style-type: none"> <li>○ Support the decision-making process</li> <li>○ Fundamental analysis, Technical analysis, Quantitative analysis, Psychological analysis</li> </ul> </li> </ul>                                      |

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|  | <ul style="list-style-type: none"> <li>▪ Different types of market risk <ul style="list-style-type: none"> <li>○ Commodity price risk</li> <li>○ Transmission price risk</li> <li>○ FX risk</li> <li>○ Interest rate risk</li> <li>○ Basis risk</li> </ul> </li> <li>▪ Market risk identification <ul style="list-style-type: none"> <li>○ Price risk</li> <li>○ Price volatility <ul style="list-style-type: none"> <li>▪ Historical price volatility &amp; Implied price volatility</li> <li>▪ Price volatility calculations <ul style="list-style-type: none"> <li>- Unweighted</li> <li>- ARCH/GARCH</li> </ul> </li> </ul> </li> <li>○ Forward curve dynamics <ul style="list-style-type: none"> <li>▪ Contango / backwardation</li> <li>▪ Convenience yield</li> <li>▪ Cost-of-carry</li> </ul> </li> </ul> </li> <li>▪ Market rules and market regulations <ul style="list-style-type: none"> <li>○ Exchange rulebooks</li> <li>○ Limit structures <ul style="list-style-type: none"> <li>- Position limits</li> <li>- Price limits</li> <li>- Price volatility limits</li> </ul> </li> <li>○ Market correction mechanisms</li> <li>○ Market abuse regulations <ul style="list-style-type: none"> <li>▪ The obligation to publish inside information</li> <li>▪ The prohibition of insider trading</li> <li>▪ The prohibition of market manipulation</li> </ul> </li> </ul> </li> <li>▪ Understanding cross-commodity risk <ul style="list-style-type: none"> <li>○ Price correlation <ul style="list-style-type: none"> <li>▪ Calculation methodology &amp; interpretation</li> </ul> </li> <li>○ Proxy-hedging <ul style="list-style-type: none"> <li>▪ Advantages &amp; disadvantages</li> <li>▪ Market liquidity – impact on price efficiency</li> </ul> </li> <li>○ Spread trading <ul style="list-style-type: none"> <li>▪ Cross-commodity, time and location spreads <ul style="list-style-type: none"> <li>- Level and volatility</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Comprehend the risks and rewards of the option market, understand volatility and maximise trading opportunities <ul style="list-style-type: none"> <li>○ Risk-reward ratios of long/short call/put positions</li> <li>○ Break-even points</li> <li>○ Maximum profit/loss levels</li> <li>○ Price volatility</li> <li>○ Extrinsic value (time &amp; expectations value) – factors of influence <ul style="list-style-type: none"> <li>▪ Volatility</li> <li>▪ Moneyness</li> <li>▪ Time-to-maturity</li> </ul> </li> </ul> </li> <li>▪ Understand market risk reporting requirements <ul style="list-style-type: none"> <li>○ Risk limits versus financial performance</li> <li>○ Risk position versus risk capital allocation</li> <li>○ Combining scenario analysis with sensitivity analysis</li> </ul> </li> <li>▪ Types of risk <ul style="list-style-type: none"> <li>○ Trading organisation-related risks <ul style="list-style-type: none"> <li>▪ Market risk</li> </ul> </li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Counterparty risk</li> <li>▪ Liquidity risk</li> <li>▪ Operational risk</li> <li>▪ Stress testing and scenario analysis             <ul style="list-style-type: none"> <li>○ Worst case test</li> <li>○ Worst losing streak test</li> <li>○ Conditional value at risk                 <ul style="list-style-type: none"> <li>▪ Expected shortfall</li> </ul> </li> <li>○ What-if scenarios</li> </ul> </li> <li>▪ Risk reporting             <ul style="list-style-type: none"> <li>○ Daily risk reports                 <ul style="list-style-type: none"> <li>▪ Credit risk reports (trading halts)</li> <li>▪ Value at risk (limit versus actual)</li> <li>▪ Greek variables (limits versus actual)</li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Advanced   |

**“ENERGY DERIVATIVES WORKSHOP”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Derivatives</li> <li>➤ Trading</li> <li>➤ Risk management</li> <li>➤ Hedging</li> </ul>  |
| Target audience                          | Front office staff, middle office staff, back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Derivatives markets</li> <li>▪ Derivatives trading – where, how and what for?</li> <li>▪ Futures and forwards – similarities &amp; differentials</li> <li>▪ Options – types, position management, settlement, valuation</li> <li>▪ Swaps – types, application, settlement, valuation</li> <li>▪ Energy derivatives, FX derivatives, Weather derivatives</li> </ul>  |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Futures”</li> <li>✓ Book “Options”</li> <li>✓ Simulation Platform: access to run trading simulations</li> <li>✓ Excel file showing the financial performance of a term contract position</li> <li>✓ Excel file showing the financial performance of an option position</li> <li>✓ Excel file with option valuation model</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Derivatives markets <ul style="list-style-type: none"> <li>○ Weapons of mass destruction vs. insurance policies</li> <li>○ Markets <ul style="list-style-type: none"> <li>▪ OTC markets</li> <li>▪ Exchange trading platforms</li> </ul> </li> <li>○ Significance <ul style="list-style-type: none"> <li>▪ Interest rate derivatives</li> <li>▪ FX derivatives</li> <li>▪ Energy derivatives</li> <li>▪ Weather derivatives</li> </ul> </li> </ul> </li> </ul>   |



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|  | <ul style="list-style-type: none"> <li>○ Volume <ul style="list-style-type: none"> <li>▪ Bank of International Settlements - data</li> </ul> </li> <li>▪ Derivatives trading – where, how and what for? <ul style="list-style-type: none"> <li>○ Market participants and their objectives, roles or tasks? <ul style="list-style-type: none"> <li>▪ Banks – Selling hedging tools</li> <li>▪ Hedgers <ul style="list-style-type: none"> <li>- Producers &amp; consumers</li> <li>- Ship owners &amp; charterers</li> </ul> </li> <li>▪ Proprietary traders <ul style="list-style-type: none"> <li>- Trading firms</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Futures and forwards – similarities &amp; differentials <ul style="list-style-type: none"> <li>○ Definition</li> <li>○ Practical application</li> <li>○ Two-sided obligation <ul style="list-style-type: none"> <li>▪ To make/take delivery at fixed price (i.e. contract price)</li> </ul> </li> <li>○ Opening transaction – Long &amp; short position</li> <li>○ Closing transaction – Eliminate position</li> <li>○ Long versus short <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Setup a short futures position by an open buy transaction.</i></li> <li><i>Execute a close buy order to liquidate the position.</i></li> <li><i>Enter into a long futures position by an open sell deal.</i></li> <li><i>Liquidate the position by the execution of a close buy order.</i></li> </ul> </li> </ul> </li> <li>○ Capital requirements <ul style="list-style-type: none"> <li>▪ The process of margining</li> </ul> </li> <li>○ Contract specifications <ul style="list-style-type: none"> <li>▪ Underlying commodity</li> <li>▪ Quality</li> <li>▪ Settlement type</li> <li>▪ Delivery location</li> <li>▪ Delivery period/moment</li> </ul> </li> <li>○ Pricing &amp; valuation <ul style="list-style-type: none"> <li>▪ Spot price of the underlying commodity</li> <li>▪ Time-to-maturity</li> <li>▪ Cost of carry</li> <li>▪ Supply chain problems</li> <li>▪ Basis risk</li> </ul> </li> <li>○ Hedging with futures <ul style="list-style-type: none"> <li>▪ Consumer's hedge <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the consumer's exposure with a long futures position.</i></li> </ul> </li> <li>▪ Producer's hedge <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the producer's exposure with a short futures position.</i></li> </ul> </li> </ul> </li> <li>○ Settlement <ul style="list-style-type: none"> <li>▪ Physical delivery vs cash settlement</li> <li>▪ Delivery vs payment</li> <li>▪ Delivery moment vs period</li> <li>▪ Trading at settlement</li> <li>▪ Alternative delivery procedure</li> <li>▪ Exchange futures for physicals</li> </ul> </li> <li>○ Rolling a futures position <ul style="list-style-type: none"> <li>▪ Roll yield</li> <li>▪ Forward curve - slope and shape</li> </ul> </li> </ul> |
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|  | <p><b>→ TRADING SIMULATION:</b><br/>Analyse the price charts and the forward curve. Explain the differences. Explain the changes of the forward curve shape.</p> <ul style="list-style-type: none"> <li>▪ Options <ul style="list-style-type: none"> <li>○ Definition</li> <li>○ Call/put</li> <li>○ Practical application</li> <li>○ Holder vs writer</li> <li>○ Right vs. (potential) obligation</li> <li>○ Exercise &amp; assignment</li> <li>○ Opening transaction – Long &amp; short position</li> <li>○ Closing transaction – Eliminate position</li> <li>○ Long versus short</li> <li>○ Capital requirements <ul style="list-style-type: none"> <li>▪ The process of margining<br/><b>→ TRADING SIMULATION:</b><br/>Setup a long call option position. Analyse your margin requirements ongoing. What do you see? Explain it.</li> </ul> </li> <li>○ Contract specifications <ul style="list-style-type: none"> <li>▪ Underlying commodity</li> <li>▪ Quality</li> <li>▪ Settlement type</li> <li>▪ Delivery location</li> <li>▪ Delivery period/moment</li> </ul> </li> <li>○ Pricing &amp; valuation <ul style="list-style-type: none"> <li>▪ Premium</li> <li>▪ Upfront payment</li> <li>▪ Out-of-pocket expense</li> <li>▪ Market- and contract-specific driving factors:<br/>- Strike, market price of underlying asset, volatility, time-to-maturity, option (exercise) style</li> </ul> </li> <li>○ Hedging with options <ul style="list-style-type: none"> <li>▪ Consumer's hedge – Price cap<br/><b>→ EXERCISE:</b><br/>Hedge the consumer's exposure with a long call position to maximise the purchase price.<br/><b>→ EXCEL:</b><br/>Graphical representation of P&amp;L of individuals legs and combination</li> <li>▪ Producer's hedge – Price floor<br/><b>→ EXERCISE:</b><br/>Hedge the producer's exposure with a long put position to minimise the sale price.<br/><b>→ EXCEL:</b><br/>Graphical representation of P&amp;L of individuals legs and combination</li> </ul> </li> <li>○ Settlement <ul style="list-style-type: none"> <li>▪ Moneyness</li> <li>▪ Exercise &amp; assignment</li> <li>▪ Physical delivery vs cash settlement</li> <li>▪ Making or taking supply</li> </ul> </li> </ul> </li> <li>▪ Swaps <ul style="list-style-type: none"> <li>○ Physical swaps <ul style="list-style-type: none"> <li>▪ Physical swaps are applied to cope with a physical desire or</li> </ul> </li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>requirement</li> <li>▪ Basis swap, location swap             <ul style="list-style-type: none"> <li>- A form of virtual transport</li> <li>→ <b>EXERCISE:</b><br/><i>Structure a power swap between Italy and Austria. Define both legs of the swap agreement.</i></li> </ul> </li> <li>▪ Cross-commodity swap</li> <li>○ Financial swaps             <ul style="list-style-type: none"> <li>▪ Financial swaps are applied to cope with a financial desire or requirement</li> <li>▪ Fixed-for-floating swap</li> <li>▪ The value at the conclusion of the deal is zero. Why?</li> <li>→ <b>EXERCISE:</b><br/><i>Hedge an exposure with a fixed-for-floating swap and assess the net result.</i></li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation, Advanced   |

**“ENERGY TRADING & RISK MANAGEMENT”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
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| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Risk management</li> <li>➤ Hedging</li> <li>➤ Derivative contracts</li> </ul>   |
| Target audience                          | Front office staff, middle office staff, back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Supply chain</li> <li>▪ Markets</li> <li>▪ Contracts</li> <li>▪ Pricing</li> <li>▪ Trading</li> <li>▪ Asset &amp; portfolio management</li> <li>▪ Risk management</li> <li>▪ Compliance</li> </ul>  |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Commodity &amp; Energy Trading”</li> <li>✓ Simulation Platform: access to run trading simulations</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Program                                  | <p>Supply chains &amp; developments</p> <ul style="list-style-type: none"> <li>▪ Oil value chain: Up-, mid- &amp; downstream, crude, grades, refining, refinery products + biofuels + hydrogen</li> <li>▪ Gas value chain: Natural gas and LNG, transport &amp; storage + biogas &amp; CNG</li> <li>▪ Coal supply chain: Grades, shipping, chartering + biomass</li> <li>▪ Electricity value chain: investment, maintenance, marginal cost of production, the merit order, the impact of renewables on the price level and volatility, the impact of an emission trading system</li> </ul> <p>Markets</p> <ul style="list-style-type: none"> <li>▪ Physical versus financial markets</li> <li>▪ Balancing, spot and term markets</li> <li>▪ On-venue and off-venue</li> </ul>         |

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|  | <ul style="list-style-type: none"> <li>- Exchange: Membership &amp; cost structure, clearing</li> <li>- OTC: Brokerage services &amp; brokerage agreement, master agreements</li> </ul> <p>Products</p> <ul style="list-style-type: none"> <li>▪ Supply contracts (Take-or-pay, Volume flexibility, Swing optionality)</li> <li>▪ Derivative contracts (Futures versus forward contracts, Options, Swaps) <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Trade futures and options. Make as much money as you can. How can you make most? What are the potential consequences meanwhile?</i></li> </ul> </li> <li>▪ Pricing &amp; Negotiating</li> </ul> <p>Pricing</p> <ul style="list-style-type: none"> <li>▪ Price formation at trading venue</li> <li>▪ Central order book</li> <li>▪ Order submission, amendment &amp; cancellation <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Enter the market and submit an order. Alter it. Cancel it.</i></li> </ul> </li> <li>▪ Market making <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Place an order to buy and simultaneously place an order to sell. This way you provide liquidity.</i></li> </ul> </li> </ul> <p>Trading</p> <ul style="list-style-type: none"> <li>▪ Trading tools</li> <li>▪ Trading strategies &amp; trading technicalities</li> <li>▪ Trading operations</li> <li>▪ Settlement</li> </ul> <p>Trading – Asset &amp; portfolio management</p> <ul style="list-style-type: none"> <li>▪ Oil markets &amp; trading: Crack spread <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the processing margin of an oil refinery depending on the product slate composition.</i></li> </ul> </li> <li>▪ Gas markets &amp; trading: Storage capacity trading &amp; time spread, transport capacity trading &amp; location spread <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate what storage capacity to invest in and analyse what strategies can be performed on the back of it.</i></li> </ul> </li> <li>▪ Coal markets &amp; trading: Shipping &amp; freight markets and incoterms</li> <li>▪ Electricity markets &amp; trading: Continuous trading versus auction, the day-ahead power market, spark, dark &amp; black spreads, PPAs, attribute energy certificates (GOs, RECs, iRECs) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the gross margin of power plants and analyse how the merit order of generating facilities appears.</i></li> </ul> </li> <li>▪ Carbon markets &amp; emission rights trading: Clean/green spreads, emission trading systems, UN initiatives, attribute energy certificates <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the impact of mandatory emission rights trading on the earning for power plants.</i></li> </ul> </li> </ul> <p>Risk management</p> <ul style="list-style-type: none"> <li>▪ Market risk <ul style="list-style-type: none"> <li>▪ Price volatility</li> <li>▪ Value at risk</li> <li>▪ Quantification of exposures <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Graphical representation of the financial performance of the</i></li> </ul> </li> </ul> </li> </ul> |
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|         | <p><i>exposure and the hedge (P&amp;L) at various price levels of the underlying commodity.</i></p> <p><b>→ EXERCISE:</b><br/> <i>Quantify the risk of a physical oil, gas or power position considering the quantity, value per unit, price volatility, a confidence level of 95% and a time horizon of 1 day.</i></p> <ul style="list-style-type: none"> <li>▪ Counterparty credit risk management             <ul style="list-style-type: none"> <li>▪ Clearing</li> <li>▪ Margining (not for long option positions)                 <ul style="list-style-type: none"> <li>• Initial margin</li> <li>• Variation margin</li> </ul> </li> </ul> </li> <li>▪ Market liquidity risk             <ul style="list-style-type: none"> <li>▪ The consequences of a poor price formation process</li> <li>▪ The relation between price volatility and asset liquidity</li> <li>▪ Market depth &amp; resilience</li> </ul> </li> <li>▪ Finance liquidity risk             <ul style="list-style-type: none"> <li>▪ Funding</li> <li>▪ The level of working capital impacts market activity</li> </ul> </li> <li>▪ Systemic risk             <ul style="list-style-type: none"> <li>▪ Multilateral netting and clearing</li> </ul> </li> <li>▪ Governance             <ul style="list-style-type: none"> <li>▪ Controls</li> <li>▪ Limit structures</li> </ul> </li> </ul> <p>Market abuse regulations &amp; compliance</p> <ul style="list-style-type: none"> <li>▪ Regimes around (incl. US and EU)</li> <li>▪ Prohibitions (insider trading &amp; market manipulation)</li> <li>▪ Obligations (publication of inside information, reporting of data, market monitoring &amp; trade surveillance)</li> <li>▪ Regulators across the globe (differentials &amp; collaboration/interaction)</li> </ul> <p>Organisational setup</p> <ul style="list-style-type: none"> <li>▪ Asset management, Portfolio management, Risk management, Compliance</li> <li>▪ Trading division (front, middle &amp; back office)</li> <li>▪ Market risk, counterparty risk, liquidity risk             <ul style="list-style-type: none"> <li>- Counterparty (credit) risk (collateralisation - initial &amp; variation margin)</li> <li>- Market risk (value at risk &amp; stress testing)</li> <li>- Liquidity risk (funding liquidity &amp; market liquidity)</li> </ul> </li> <li>▪ Reporting</li> <li>▪ Limit structures</li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation, Advanced   |

**“DERIVATIVES MARKETS, HEDGING AND RISK MANAGEMENT”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Risk management</li> <li>➤ Hedging</li> <li>➤ Derivatives</li> <li>➤ Pricing</li> </ul>  |
| Target audience                          | Front office staff, Middle office staff, Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Derivatives markets</li> <li>▪ Hedging exposures</li> <li>▪ Hedging strategies for producers &amp; consumers</li> <li>▪ Hedging tools, their characteristics and their pros &amp; cons</li> <li>▪ Forwards, futures, swaps, options</li> <li>▪ Valuation</li> </ul>   |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Futures”</li> <li>✓ Handbook “Options”</li> <li>✓ Trading Simulation Platform: access to run trading simulation <ul style="list-style-type: none"> <li>- Sim “Options – Arbitrage &amp; Synthetics”</li> <li>- Sim “Options – Strategies”</li> <li>- Sim “Options – The Greeks”</li> </ul> </li> <li>✓ Excel file: “Black &amp; Scholes option valuation model”</li> <li>✓ Excel file: “Financial performance of futures position”</li> <li>✓ Excel file: “Financial performance of option position”</li> <li>✓ Excel file: “Financial performance of a position hedged with a future”</li> <li>✓ Excel file: “Financial performance of a position hedged with an option”</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>                   |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Derivatives markets <ul style="list-style-type: none"> <li>○ OTC derivatives markets <ul style="list-style-type: none"> <li>▪ Forwards</li> <li>▪ Swaps</li> </ul> </li> <li>○ Exchange-traded derivatives</li> </ul> </li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>▪ Futures</li> <li>▪ Plain vanilla options <ul style="list-style-type: none"> <li>- European style</li> <li>- American style</li> <li>(+ Asian style)</li> </ul> </li> <li>○ BIS reports <ul style="list-style-type: none"> <li>▪ Traded volume</li> <li>▪ Open interest <ul style="list-style-type: none"> <li>→ <b>ASSIGNMENT:</b></li> <li><i>Which product has the highest trading volume and what derivatives contract faces the highest open interest?</i></li> </ul> </li> </ul> </li> <li>▪ Hedging <ul style="list-style-type: none"> <li>○ Hedging consumer exposures <ul style="list-style-type: none"> <li>▪ With long futures position <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the exposure with futures on the basis of a value hedge, a volume hedge, a beta hedge and a proxy hedge.</i></li> </ul> </li> <li>▪ With call options (price cap)</li> </ul> </li> <li>○ Hedging producer exposures <ul style="list-style-type: none"> <li>▪ With short futures position</li> <li>▪ With put options (price floor) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the exposure with a put option position. Which strike price do you select, and why?</i></li> </ul> </li> </ul> </li> <li>○ Hedging with swaps <ul style="list-style-type: none"> <li>▪ Cross-commodity swap</li> <li>▪ Fixed-for-floating swap</li> <li>▪ Floating-for-floating swap <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge an exposure whereby you work for an electricity supplier who gets supplied power by a producer at a fixed price, while receiving floating from clients. Next, calculate what will be the overall result at maturity of the swap?</i></li> </ul> </li> <li>▪ Swap futures</li> <li>▪ Swaptions</li> </ul> </li> <li>○ Sophisticated strategies <ul style="list-style-type: none"> <li>▪ Structuring</li> <li>▪ Combining assets</li> </ul> </li> <li>○ Advantages <ul style="list-style-type: none"> <li>▪ Advantages &amp; disadvantages of strategies <ul style="list-style-type: none"> <li>→ <b>DEBATE:</b></li> <li><i>What pros and cons can you identify about the different hedging tools and strategies?</i></li> </ul> </li> <li>▪ Risks <ul style="list-style-type: none"> <li>- Basis risk</li> <li>- Forward curve shape (contango / backwardation)</li> </ul> </li> </ul> </li> <li>▪ Risk management <ul style="list-style-type: none"> <li>○ Market risk – Scenario analysis <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Check the value at risk if you take a futures position and also when you triple it. Now liquidate some of your position and check again.</i></li> </ul> </li> <li>○ Counterparty credit risk management <ul style="list-style-type: none"> <li>▪ Clearing</li> </ul> </li> </ul> </li> </ul> </li></ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Margining (not for long option positions)             <ul style="list-style-type: none"> <li>• Initial margin</li> <li>• Variation margin</li> </ul> </li> <li>→ <b>EXERCISE:</b><br/><i>Calculate the impact of a price volatility change on the capital requirements called for by a clearing organisation.</i></li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Check the margin call upon taking position in futures and when you buy a call option.</i></li> <li>○ Market liquidity risk             <ul style="list-style-type: none"> <li>▪ The consequences of a poor price formation process</li> <li>▪ The relation between price volatility and asset liquidity</li> <li>▪ Market depth &amp; resilience</li> </ul> </li> <li>○ Finance liquidity risk             <ul style="list-style-type: none"> <li>▪ Funding</li> <li>▪ The level of working capital impacts market activity</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Analyse what happens when you transact. What fees are charged? What happens to your capital available? Is this static? Or what causes it to change?</i></li> </ul> </li> <li>○ Systemic risk             <ul style="list-style-type: none"> <li>▪ Multilateral netting and clearing</li> <li>→ <b>DEBATE:</b><br/><i>What pros and cons can you identify about the centralising risk at the level of central counterparties?</i></li> </ul> </li> <li>○ Governance             <ul style="list-style-type: none"> <li>▪ Controls</li> <li>▪ Limit structures</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation, Advanced   |

**“MASTERING POWER TRADING CONCEPTS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Interactive sessions</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Pricing</li> <li>➤ Contracting</li> <li>➤ Risk management</li> </ul>   |
| Target audience                          | Front office staff, Middle office staff, Back office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Power trading concepts, including, but not limited to, volatility, correlation, time spread, location spread, spark spread, futures spread, margin, collateral, trading, pricing mechanisms and methodologies, hedging, futures trading, financial engineering, forward curves, market structure, trading controls, ethics and compliance.</li> </ul>  |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Pre-read materials</li> <li>✓ Simulation Platform: access to run trading simulations</li> <li>✓ Handout (slides)</li> </ul>   |
| Programme                                | <p>Power generation, consumption, transmission, storage</p> <p>Power trading</p> <ul style="list-style-type: none"> <li>▪ Bilateral deal-making &amp; Over-the-counter markets</li> <li>▪ Master agreement</li> <li>▪ Brokers &amp; brokerage services</li> <li>▪ Slewing</li> <li>▪ Exchanges &amp; other trading venues</li> <li>▪ Clearing, clearing house, clearing member, central counterparty</li> </ul> <p>Transmission</p> <ul style="list-style-type: none"> <li>▪ Cables, including cross-zonal/cross-border</li> <li>▪ Nomination</li> <li>▪ Allocation &amp; reconciliation</li> </ul> <p>Trading operations</p> <ul style="list-style-type: none"> <li>▪ Netting</li> </ul> <p style="text-align: right;"><b>→ TRADING SIMULATION:</b><br/><i>Buy and sell as much as you want and keep on track of your overall position.</i></p> <ul style="list-style-type: none"> <li>▪ Deal confirmation</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>▪ Allocation &amp; Reconciliation</li> <li>▪ Billing</li> <li>▪ Initial margin</li> <li>▪ Variation margin</li> </ul> <p>Pricing</p> <ul style="list-style-type: none"> <li>▪ Pricing mechanisms and methodologies</li> <li>▪ Price formation</li> <li>▪ Central order book</li> <li>▪ Order types</li> <li>▪ Order aggression &amp; initiation</li> <li>▪ Price volatility</li> </ul> <p style="padding-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>Enter the market and analyse the frequency and significance of price fluctuations. Check the impact of appearing news items on the price level (and its change).</i></p> <ul style="list-style-type: none"> <li>▪ Price correlation</li> <li>▪ Price differentials</li> <li>▪ Forward curve – Contango &amp; backwardation</li> <li>▪ Spreads – Quality spread, Time spread, Location spread, Spark spread</li> </ul> <p style="padding-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>Simulate the spark spread levels of three different power plants and analyse the dynamics of them. Do they change in line?</i></p> <p>Futures spreads</p> <ul style="list-style-type: none"> <li>▪ A long futures position, in combination with a short futures position</li> <li>▪ Buying/selling a time/location/spark spread</li> <li>▪ Long/short time/location/ spark spread</li> </ul> <p>Risk management</p> <ul style="list-style-type: none"> <li>▪ Creditworthiness/solvency &amp; credit risk</li> <li>▪ Liquidity &amp; liquidity risk</li> </ul> <p style="padding-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>Simulate order submission, but check market liquidity first. Check out the bid-ask spread and market depth.</i></p> <p style="padding-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>Simulate deal-making and position management by taking a position in a futures contract and face the consequences for your available working capital (funding liquidity)</i></p> <ul style="list-style-type: none"> <li>▪ Market risk</li> <li>▪ Exposure</li> <li>▪ Value at risk</li> </ul> <p style="padding-left: 40px;"><b>→ TRADING SIMULATION:</b><br/><i>Simulate the value at risk level upon order execution and position change.</i></p> <ul style="list-style-type: none"> <li>▪ Stress test</li> <li>▪ Trading controls</li> <li>▪ Mandates</li> <li>▪ Limit structures</li> </ul> <p>Hedging</p> <ul style="list-style-type: none"> <li>▪ Hedging strategies</li> <li>▪ Hedging tools</li> <li>▪ Delta-hedging</li> <li>▪ Proxy-hedging</li> </ul> <p>Derivatives</p> <ul style="list-style-type: none"> <li>▪ Forward</li> </ul> |
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CURRICULUM

|         |   |
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|         | <ul style="list-style-type: none"> <li>▪ Future</li> <li>▪ Swap</li> <li>▪ Option</li> <li>▪ Contract for difference</li> </ul> <p>Financial engineering &amp; modelling</p> <ul style="list-style-type: none"> <li>▪ Black &amp; Scholes model</li> <li>▪ Monte Carlo simulation</li> <li>▪ Storage capacity             <ul style="list-style-type: none"> <li>○ Time spread option</li> </ul> </li> <li>▪ Transport capacity             <ul style="list-style-type: none"> <li>○ Location spread option</li> </ul> </li> <li>▪ Generation capacity             <ul style="list-style-type: none"> <li>○ Spark spread option</li> </ul> </li> </ul> <p>Ethics and compliance</p> <ul style="list-style-type: none"> <li>▪ Trade compliance</li> <li>▪ Compliancy framework</li> <li>▪ Trade surveillance</li> <li>▪ Conduct &amp; misconduct             <ul style="list-style-type: none"> <li>○ Money laundering</li> <li>○ Terrorist financing</li> <li>○ Tax fraud</li> <li>○ VAT carroussel</li> <li>○ Bribery</li> <li>○ Insider trading</li> <li>○ Market manipulation</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation, Advanced  |

## “CREDIT & LIQUIDITY RISK AND COUNTERPARTY RISK MANAGEMENT IN ENERGY TRADING”

BESPOKE IN-COMPANY WORKSHOP – In English language

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|--|--|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>  |
| Skills areas supported                   | ➤ Risk management  |
| Target audience                          | Primarily Middle office staff, but also suitable for Front office and Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Counterparty risk &amp; counterparty (credit) risk management</li> <li>▪ Credit risk management</li> <li>▪ Liquidity risk &amp; liquidity risk management</li> <li>▪ Mandates, controls &amp; limit structures</li> </ul>  |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Bilateral deals &amp; OTC trading”</li> <li>✓ Trading Simulation Platform: access to run trading simulations</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Counterparty risk <ul style="list-style-type: none"> <li>○ The risk of non-delivery / non-supply – Delivery risk <ul style="list-style-type: none"> <li>▪ Failure &amp; force majeure</li> </ul> </li> <li>○ The risk of non-payment – Credit risk <ul style="list-style-type: none"> <li>▪ Clearing <ul style="list-style-type: none"> <li>• Clearing house &amp; Clearing member</li> </ul> </li> <li>▪ Collateralisation <ul style="list-style-type: none"> <li>• Credit support annex (CSA)</li> </ul> </li> <li>▪ Margining <ul style="list-style-type: none"> <li>• Initial margin &amp; Variation margin</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Watch what immediate temporarily allocation of risk capital is required upon entering into a position. Next, analyse the call for additional funds in case of an adverse market move.</i></li> </ul> </li> </ul> </li> <li>▪ Defaults &amp; the default waterfall</li> </ul> </li> <li>○ More credit risk management in OTC markets <ul style="list-style-type: none"> <li>▪ Due diligence</li> <li>▪ Rating agencies</li> </ul> </li> </ul> |

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|         | <ul style="list-style-type: none"> <li>▪ Letters of credit &amp; bank guarantees</li> <li>▪ Credit limits             <ul style="list-style-type: none"> <li>• Temporarily trading halt/stop</li> <li>• The process of sleeving                 <ul style="list-style-type: none"> <li>- How? Who? Why?</li> </ul> </li> </ul> </li> <li>▪ Liquidity risk             <ul style="list-style-type: none"> <li>○ Market liquidity                 <ul style="list-style-type: none"> <li>▪ Indicators of market liquidity                     <ul style="list-style-type: none"> <li>- Bid-ask spread (absolute – relative)</li> <li>- Market depth</li> <li>- Churn rates</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Narrow down the bid-ask spread by order initiation.<br/>                     Widen the bid-ask spread by order cancellation.<br/>                     Watch your pending order. Check market depth developing.</i> </li> </ul> </li> <li>▪ Consequences of poor price formation for consumers</li> <li>▪ The relation between price volatility and asset liquidity</li> <li>▪ Market depth &amp; resilience</li> </ul> </li> <li>○ Finance liquidity                 <ul style="list-style-type: none"> <li>▪ Funding the trading function/activity</li> <li>▪ The level of working capital impacts the market activity</li> <li>▪ Risk appetite of the company &amp; shareholder structure</li> <li>▪ The cost of deal-making:                     <ul style="list-style-type: none"> <li>- Buying commodities, hard &amp; software, access to data &amp; news, membership fees, transaction fees</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b><br/> <i>Monitor your working capital while doing deals. Focus on the dynamics due to exchange fees, clearing fees, margin calls or cash withdrawals</i> </li> </ul> </li> </ul> <li>▪ The circle: market risk - credit risk - liquidity risk             <ul style="list-style-type: none"> <li>○ The inter-relationships - Balancing the ratios</li> <li>○ Systemic risk</li> </ul> </li> <li>▪ Governance             <ul style="list-style-type: none"> <li>○ Framework</li> <li>○ Setup                 <ul style="list-style-type: none"> <li>▪ Controls                     <ul style="list-style-type: none"> <li>• Pre-trade, trade &amp; post-trade controls</li> </ul> </li> <li>▪ Limit structures                     <ul style="list-style-type: none"> <li>• Risk limits &amp; P/L limits</li> <li>• Position limits (also to avoid market manipulation)</li> <li>• Volume limits &amp; Price limits</li> </ul> </li> </ul> </li> </ul> </li> |
| Options | Further tailoring for in-house delivery is possible   |
| Other   | Foundation level  |

**“DERIVATIVES MARKETS, HEDGING & RISK MANAGEMENT”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Risk management</li> <li>➤ Hedging</li> <li>➤ Derivatives trading</li> <li>➤ Pricing &amp; valuation</li> </ul>  |
| Target audience                          | Front office staff, Middle office staff, Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Risk, risk management</li> <li>▪ Hedging, hedging strategies, hedging tools</li> <li>▪ Derivative contracts – vanilla contracts &amp; exotics and structures products</li> <li>▪ Forwards, futures, options, swaps and their features</li> <li>▪ Pricing &amp; valuation</li> <li>▪ Scenarios, results, performance, exposures</li> </ul>   |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Futures”</li> <li>✓ Handbook “Options”</li> <li>✓ Trading Simulation Platform: access to run trading simulations</li> <li>✓ Excel file: “Black &amp; Scholes option valuation model”</li> <li>✓ Excel file: “Financial performance of futures position”</li> <li>✓ Excel file: “Financial performance of option position”</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Derivatives markets <ul style="list-style-type: none"> <li>○ OTC derivatives markets <ul style="list-style-type: none"> <li>▪ Forwards</li> <li>▪ Exotic options <ul style="list-style-type: none"> <li>- Binary option</li> <li>- Barrier option</li> <li>- Lookback options</li> <li>- More varieties</li> </ul> </li> <li>▪ Swaps</li> </ul> </li> <li>○ Exchange-traded derivatives</li> </ul> </li> </ul>   |

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|  | <ul style="list-style-type: none"> <li>▪ Futures</li> <li>▪ Plain vanilla options <ul style="list-style-type: none"> <li>- European style</li> <li>- American style</li> <li>(+ Asian style)</li> </ul> </li> <li>○ Other types of derivative contracts <ul style="list-style-type: none"> <li>▪ Contract for difference (CFD)</li> <li>▪ Exchange-traded fund (ETF)</li> </ul> </li> <li>○ BIS reports <ul style="list-style-type: none"> <li>▪ Traded volume</li> <li>▪ Open interest <ul style="list-style-type: none"> <li>→ <b>ASSIGNMENT:</b></li> <li><i>Which product has the highest trading volume and what derivatives contract faces the highest open interest?</i></li> </ul> </li> </ul> </li> <li>▪ Hedging <ul style="list-style-type: none"> <li>○ Hedging consumer exposures <ul style="list-style-type: none"> <li>▪ With long futures position <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the exposure with futures on the basis of a value hedge, a volume hedge, a beta hedge and a proxy hedge.</i></li> </ul> </li> <li>▪ With call options (price cap) <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Hedge the exposure with a call option position. Simulate the break even point and risk-reward structure.</i></li> </ul> </li> <li>▪ Long call spread</li> <li>▪ Zero-cost collar <ul style="list-style-type: none"> <li>→ <b>CASE:</b></li> <li><i>Graphical representation of the financial performance of the exposure and the hedge (P&amp;L), being a long call spread,, at various price levels of the underlying commodity.</i></li> </ul> </li> </ul> </li> <li>○ Hedging producer exposures <ul style="list-style-type: none"> <li>▪ With short futures position</li> <li>▪ With put options (price floor) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge the exposure with a put option position. Which strike price do you select, and why?</i></li> </ul> </li> <li>▪ Long put spread <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Hedge the exposure with a put spread. Simulate what happens to the risk-reward structure and break-even point when you select other strike levels.</i></li> </ul> </li> <li>▪ Zero-cost collar <ul style="list-style-type: none"> <li>→ <b>CASE:</b></li> <li><i>Graphical representation of the financial performance of the exposure and the hedge (P&amp;L), being a zero-cost collar, at various price levels of the underlying commodity.</i></li> </ul> </li> </ul> </li> <li>○ Hedging with swaps <ul style="list-style-type: none"> <li>▪ Cross-commodity swap</li> <li>▪ Fixed-for-floating swap</li> <li>▪ Floating-for-floating swap <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Hedge an exposure whereby you work for an oil supplier who gets supplied electricity by a power producer at a fixed price, while receiving floating from clients. Next, calculate what will</i></li> </ul> </li> </ul> </li> </ul> </li> </ul> |
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|  | <p><i>be the overall result at maturity of the swap?</i></p> <ul style="list-style-type: none"> <li>▪ Swap futures</li> <li>▪ Swaptions</li> <li>○ Sophisticated strategies <ul style="list-style-type: none"> <li>▪ Structuring</li> <li>▪ Combining assets</li> </ul> </li> <li>○ Advantages <ul style="list-style-type: none"> <li>▪ Advantages &amp; disadvantages of strategies</li> <li>→ <b>DEBATE:</b><br/><i>What pros and cons can you identify about the different hedging tools and strategies?</i></li> <li>▪ Risks <ul style="list-style-type: none"> <li>- Basis risk</li> <li>- Forward curve shape (contango / backwardation)</li> </ul> </li> </ul> </li> <li>▪ Risk management <ul style="list-style-type: none"> <li>○ Scenario analysis <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b><br/><i>Graphical representation of the financial performance of the exposure and the hedge (P&amp;L) at various price levels of the underlying commodity.</i></li> </ul> </li> <li>○ Sensitivity analysis <ul style="list-style-type: none"> <li>▪ Risk parameters</li> <li>▪ Greek variables <ul style="list-style-type: none"> <li>- Delta</li> <li>- Gamma</li> <li>- Vega</li> <li>- Theta</li> <li>- Rho</li> </ul> </li> <li>→ <b>SIMULATION:</b><br/><i>Run a simulation whereby you take an option position After which you analyse the Delta position and its dynamics.</i></li> </ul> </li> <li>○ Dynamic market risk management <ul style="list-style-type: none"> <li>▪ Delta-hedging</li> <li>→ <b>TRADING SIMULATION:</b><br/><i>Run a simulation in the capacity of trader and hedge your option position/portfolio with the right number of underlying futures contracts to make your portfolio immune. Keep doing so to hedge dynamically.</i></li> </ul> </li> <li>○ Scenario analysis <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b><br/><i>Run a simulation whereby the Greek variables and their dynamics should be tracked.</i></li> </ul> </li> <li>○ Counterparty credit risk management <ul style="list-style-type: none"> <li>▪ Clearing</li> <li>▪ Margining (not for long option positions) <ul style="list-style-type: none"> <li>• Initial margin</li> <li>• Variation margin</li> </ul> </li> </ul> </li> <li>○ Market liquidity risk <ul style="list-style-type: none"> <li>▪ The consequences of a poor price formation process</li> <li>▪ The relation between price volatility and asset liquidity</li> <li>▪ Market depth &amp; resilience</li> </ul> </li> <li>○ Finance liquidity risk <ul style="list-style-type: none"> <li>▪ Funding</li> </ul> </li> </ul> </li></ul> |
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|         | <ul style="list-style-type: none"> <li>▪ The level of working capital impacts market activity</li> <li>○ Systemic risk             <ul style="list-style-type: none"> <li>▪ Multilateral netting and clearing</li> </ul> </li> <li>○ Governance             <ul style="list-style-type: none"> <li>▪ Controls</li> <li>▪ Limit structures                 <ul style="list-style-type: none"> <li>• Risk limits</li> <li>• P/L limits</li> <li>• Position limits</li> <li>• Price limits</li> <li>• Limits on Greeks</li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Other   | Advanced   |

## “FRONT TO BACK OFFICE: TRADING CONTROLS, RISK MEASUREMENT & MODELLING”

BESPOKE IN-COMPANY WORKSHOP – In English language

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| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Risk management</li> <li>➤ Modelling</li> <li>➤ Option valuation</li> <li>➤ Option hedging</li> </ul>  |
| Target audience                          | Front office staff, Middle office staff, Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Trading controls applied by traders, trading venues and clearing organisations</li> <li>▪ Risk measurements methodologies and their features</li> <li>▪ Modelling of flexibility in physical and financial assets in terms of options</li> </ul>  |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Value at risk”</li> <li>✓ Excel file with generic option valuation model</li> <li>✓ Excel file with complex option valuation model</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Trading controls at the front office <ul style="list-style-type: none"> <li>○ Pre-trade controls <ul style="list-style-type: none"> <li>▪ Market &amp; credit limits</li> <li>▪ Price validation &amp; collars (benchmark: ‘last’) <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Try to buy below market price and experience order Rejection (fill-or-kill order).</i></li> </ul> </li> <li>▪ Order volume/value limit</li> <li>▪ Repeated automation throttles</li> <li>▪ Message limits</li> <li>▪ Limit up/down protection</li> <li>▪ Self-trade prevention</li> <li>▪ ICT settings (warnings)</li> <li>▪ Intraday clearing permission revocation</li> </ul> </li> <li>○ Post-trade controls</li> </ul> </li> </ul>                  |

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|  | <ul style="list-style-type: none"> <li>▪ Market risk limits <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b><br/><i>Enlarge position to exceed risk limit.</i></li> </ul> </li> <li>▪ Credit risk limits</li> <li>▪ Position limits <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b><br/><i>Enlarge position to meet position limit.</i></li> <li>→ <b>CASE STUDY:</b><br/><i>Analyse the measures implemented by a trading platform.</i></li> </ul> </li> <li>▪ Trading controls in the middle office <ul style="list-style-type: none"> <li>○ Mandates <ul style="list-style-type: none"> <li>▪ Geography, commodity, maximum time horizon</li> </ul> </li> <li>○ Market access <ul style="list-style-type: none"> <li>▪ Exchanges, brokers, counterparties, master agreements, credit lines</li> </ul> </li> </ul> </li> <li>▪ Trading controls in the back office <ul style="list-style-type: none"> <li>○ Deal confirmation</li> <li>○ Trading &amp; risk management system alerts</li> <li>○ Checks with trading venue (e.g. exchange)</li> <li>○ Checks with brokerage firm</li> <li>○ Risk capital vs. working capital</li> </ul> </li> <li>▪ Risk measurement <ul style="list-style-type: none"> <li>○ Standard deviation <ul style="list-style-type: none"> <li>▪ Distribution curve</li> <li>▪ Confidence level</li> <li>▪ 68%, 95%, 9.5%, 99%, 99.5%</li> <li>▪ Z-factor</li> </ul> </li> <li>○ Skew &amp; kurtosis <ul style="list-style-type: none"> <li>▪ Tail risk</li> <li>▪ Model risk</li> </ul> </li> <li>○ Sharpe ratio <ul style="list-style-type: none"> <li>▪ Treanor</li> </ul> </li> <li>○ Beta <ul style="list-style-type: none"> <li>▪ Beta-hedging <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b><br/><i>Apply a Beta-hedging strategy to an exposure with futures contracts.</i></li> </ul> </li> </ul> </li> <li>○ Value at risk <ul style="list-style-type: none"> <li>▪ Parametric approach – Assumption: normal distribution</li> <li>▪ Historical simulation – Problem: lack of data</li> <li>▪ Monte Carlo simulations – Challenge: relevant &amp; reasonable assumptions <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b><br/><i>Calculation of the value at risk by the three methods.<br/>Compare the outcomes based on the characteristics.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Relevant concepts <ul style="list-style-type: none"> <li>○ Price volatility <ul style="list-style-type: none"> <li>▪ Data set</li> <li>▪ Processing of data</li> <li>▪ Application in risk calculations</li> <li>▪ Application in option premium calculations</li> <li>▪ Reliability</li> </ul> </li> <li>○ Price correlation <ul style="list-style-type: none"> <li>▪ Model risk in model risk</li> </ul> </li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Application in risk calculations</li> <li>▪ Application in spread option premium calculations</li> <li>▪ Modelling flexibility in supply contracts             <ul style="list-style-type: none"> <li>○ Validity time of proposal , Take or pay constructions, Volume flexibility, Swing optionality</li> <li>○ What types of exotic options can be used to model the flex?                 <ul style="list-style-type: none"> <li>▪ For the purpose of valuation &amp; hedging                     <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Features of the flexibility indicates the required option types and their characteristics, number of options, and the time-to-maturity of the options.</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Modelling flexibility in physical assets             <ul style="list-style-type: none"> <li>○ Production capacity                 <ul style="list-style-type: none"> <li>▪ Cross-commodity spread option                     <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Types of capacity indicate option type, number of options, time-to-maturity of options (granularity).</i></li> </ul> </li> </ul> </li> <li>○ Storage capacity                 <ul style="list-style-type: none"> <li>▪ Call option of the time spread                     <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Different types of capacity indicate different option types, number of options, and different times-to-maturity (granularity).</i></li> </ul> </li> </ul> </li> <li>○ Transport capacity                 <ul style="list-style-type: none"> <li>▪ Call option of the location spread</li> </ul> </li> </ul> </li> <li>▪ Asset-backed trading – Dynamic hedging of flexibility             <ul style="list-style-type: none"> <li>○ Financial optimisation</li> <li>○ Locking-in intrinsic value &amp; monetising extrinsic value</li> <li>○ Spread option valuation models</li> <li>○ Generation of Delta values to perform Delta-hedging                 <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Change the input variables to identify the impact on the option value. What surprises you? Why?</i></li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Advanced   |

**“POWER PRICE RISK MANAGEMENT”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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|--|--|
| Duration                                 | In total: 4 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises and case studies + even more so due to tutor’s character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Risk management</li> <li>➢ Hedging</li> <li>➢ Derivative contracts</li> </ul>   |
| Target audience                          | Front office staff, Middle office staff, Back office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Power price risk identification</li> <li>▪ Power price risk assessment</li> <li>▪ Power price risk quantification</li> <li>▪ Power derivatives</li> <li>▪ Hedging tools</li> <li>▪ Hedging strategies</li> <li>▪ Characteristics of hedging strategies, including pros and cons</li> </ul>   |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Value at risk”</li> <li>✓ Simulation Platform: access to run trading simulations</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Power price risk identification <ul style="list-style-type: none"> <li>○ Commodity price risk <ul style="list-style-type: none"> <li>▪ Price volatility &amp; Probability distribution curve</li> </ul> </li> <li>○ Freight rate risk <ul style="list-style-type: none"> <li>▪ The cost of chartering</li> </ul> </li> <li>○ FX risk <ul style="list-style-type: none"> <li>▪ Foreign exchange rate risk</li> </ul> </li> <li>○ Weather risk <ul style="list-style-type: none"> <li>▪ Wind, solar radiation and temperature impact electricity generation and consumption levels</li> </ul> </li> </ul> </li> <li>▪ Power price risk assessment <ul style="list-style-type: none"> <li>○ Risk vs. uncertainty <ul style="list-style-type: none"> <li>▪ Differences</li> </ul> </li> <li>○ Risk qualification</li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>▪ Subjective</li> <li>▪ Does not allow for limit structure</li> <li>○ Risk quantification <ul style="list-style-type: none"> <li>▪ Probability distribution <ul style="list-style-type: none"> <li>- Distribution curves</li> <li>- Skewness – positive &amp; negative skew</li> <li>- The relation to price volatility</li> </ul> </li> <li>▪ Value at risk <ul style="list-style-type: none"> <li>- Methods <ul style="list-style-type: none"> <li>- Parametric approach <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Enter into a position and track the value at risk.</i></li> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the value at risk of a long physical power position (zone 1) considering a 95% confidence level and a 1-day time horizon.</i></li> <li><i>Do the same for a given short power futures position (zone 2) considering identical conditions.</i></li> <li><i>Calculate the value at risk of the combined portfolio considering a price correlation between the two zones of +0.84.</i></li> <li><i>Explain the concept of cross-margining in case of clearing.</i></li> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Enter into a long &amp; short position and track the value at risk. Explain this level.</i></li> </ul> </li> <li>- Historical simulation approach</li> <li>- Monte Carlo Simulation <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Calculate the value at risk of a position considering a 95% and a 99% confidence level based on some assumption made.</i></li> </ul> </li> <li>- Disadvantages or features of each methodology <ul style="list-style-type: none"> <li>- Handling skew - Underestimation of tail risk</li> <li>- Know how, expertise</li> <li>- Computing power</li> <li>- Complexity &amp; Optionality in portfolio</li> <li>- Correlation coefficients</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Stress testing <ul style="list-style-type: none"> <li>- Methods <ul style="list-style-type: none"> <li>- Conditional VaR (Expected shortfall) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the expected shortfall of a position considering a given confidence level.</i></li> </ul> </li> <li>- What-if scenarios</li> </ul> </li> <li>- Disadvantages of each methodology</li> </ul> </li> <li>▪ Power price risk control <ul style="list-style-type: none"> <li>○ Liquidation</li> <li>○ Hedging <ul style="list-style-type: none"> <li>▪ Tools</li> <li>▪ Power futures <ul style="list-style-type: none"> <li><b>EXERCISE:</b></li> <li><i>Hedge a Belgium power exposure with a German power futures contract.</i></li> </ul> </li> </ul> </li> </ul> </li> </ul> </li></ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Power options             <ul style="list-style-type: none"> <li>- Vanilla options</li> </ul> <p><b>EXERCISE:</b><br/><i>Hedge a power exposure with a European style option.</i></p> <ul style="list-style-type: none"> <li>- Barrier options                 <ul style="list-style-type: none"> <li>- Up-and-in option</li> <li>- Up-and-out option</li> <li>- Down-and-in option</li> <li>- Down-and-out option</li> </ul> </li> </ul> <p><b>EXERCISE:</b><br/><i>Hedge a power exposure with a knock-out option to save on premium spendings, while potentially being able to re-hedge at a preferred (strike) price level.</i></p> </li> <li>▪ Power swaps             <ul style="list-style-type: none"> <li>- Swap on average</li> <li>- Capped swap</li> <li>- Participation swap</li> <li>- Range out swap</li> </ul> <p><b>EXERCISE:</b><br/><i>Basis swap</i></p> <p><b>EXERCISE:</b><br/><i>Inter-commodity-swap</i></p> </li> <li>▪ Weather derivatives             <p><b>CASE:</b><br/><i>Wind futures.</i></p> <p><b>EXERCISE:</b><br/><i>Hedge the financial performance of a company with temperature derivative contracts (use futures &amp; options).</i></p> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible.  |
| Level   | Advanced  |



**“COMMODITY OPTIONS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Option trading</li> <li>➤ Option pricing and valuation</li> <li>➤ Risk management</li> <li>➤ Trading operations</li> </ul>   |
| Target audience                          | Front office staff, Middle office staff, Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Outright options, embedded options and real options</li> <li>▪ Vanilla &amp; exotic options</li> <li>▪ Option valuation</li> <li>▪ Option risk parameters</li> <li>▪ Option position management</li> <li>▪ Risk-reward profiles, ideal scenarios and break-even points</li> <li>▪ Hedging exposures with options &amp; hedging of option positions with futures</li> <li>▪ Flexibility in physical and financial assets in terms of options</li> </ul>  |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Options”</li> <li>✓ Simulation Platform: access to run trading simulations</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Introduction to options <ul style="list-style-type: none"> <li>○ Derivative contract(s)</li> <li>○ Definition <ul style="list-style-type: none"> <li>▪ Call</li> <li>▪ Put</li> </ul> </li> <li>○ Option holder vs. option writer <ul style="list-style-type: none"> <li>▪ Risk-reward profiles</li> </ul> </li> <li>○ Right vs. (potential) obligation <ul style="list-style-type: none"> <li>▪ To take/make delivery</li> </ul> </li> <li>○ Premium</li> </ul> </li> <li>▪ Exchange-traded (plain vanilla) options <ul style="list-style-type: none"> <li>○ Characteristics</li> </ul> </li> </ul>   |

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|  | <ul style="list-style-type: none"> <li>○ Option styles <ul style="list-style-type: none"> <li>▪ European style options <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Analyse and discuss the Black &amp; Scholes option valuation model, as well as its limitations.</i></li> </ul> </li> <li>▪ American style options <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the price of a slightly out-of-the-money call option with a binomial tree approach.</i></li> </ul> </li> </ul> </li> <li>▪ OTC-traded (exotic) options <ul style="list-style-type: none"> <li>○ Options with specific conditions (e.g. path-dependency) <ul style="list-style-type: none"> <li>▪ Binary options</li> <li>▪ Barrier options (knock-in/out)</li> <li>▪ Lookback options</li> <li>▪ Compound options</li> <li>▪ Shout options</li> <li>▪ Swing options <ul style="list-style-type: none"> <li>→ <b>SIMULATION:</b></li> <li><i>Analyse and discuss the option valuation models, their complexity and the factors of relevance.</i></li> </ul> </li> </ul> </li> <li>○ Option styles <ul style="list-style-type: none"> <li>▪ Asian style options</li> <li>▪ Bermudan/Canary/etc. style options</li> </ul> </li> </ul> </li> <li>▪ Option valuation <ul style="list-style-type: none"> <li>○ Price driving factors (contract-specific &amp; market-specific)</li> <li>○ Intrinsic &amp; extrinsic value (time &amp; expectations value) <ul style="list-style-type: none"> <li>▪ Black &amp; Scholes <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Trade options and see the value change upon a price change of the underlying asset</i></li> </ul> </li> <li>▪ Black-76 <ul style="list-style-type: none"> <li>→ <b>CASE:</b></li> <li><i>Checking a model for options underlying a futures contract</i></li> </ul> </li> <li>▪ Binomial tree model ((e.g. Cox-Ross-Rubinstein) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the value of a call option with a binomial tree</i></li> </ul> </li> <li>▪ Monte Carlo Simulations (MCS) <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Calculate the value of a freight option with MCS</i></li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Hedging <ul style="list-style-type: none"> <li>○ Hedging with options <ul style="list-style-type: none"> <li>▪ Hedging natural physical/financial short position with Long Call option position <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Graphical representation of P&amp;L of individuals legs and combination</i></li> </ul> </li> <li>▪ Hedging natural physical/financial long position with Long Put option position <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Graphical representation of P&amp;L of individuals legs and combination</i></li> </ul> </li> </ul> </li> <li>○ Hedging of options <ul style="list-style-type: none"> <li>▪ Hedge with underlying asset (e.g. futures contract)</li> <li>▪ Delta-hedging</li> </ul> </li> </ul> </li> </ul> |
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|         | <p><b>→ TRADING SIMULATION:</b><br/> <i>Setup an option position and hedge with underlying futures. Do so dynamically as the Delta position may have change.</i></p> <ul style="list-style-type: none"> <li>▪ Dynamic adjustments             <ul style="list-style-type: none"> <li>- Due to price moves</li> <li>- Due to time passing by</li> <li>- Due to volatility changes</li> </ul> </li> <li>▪ Risk management of option positions             <ul style="list-style-type: none"> <li>○ Scenario analysis</li> <li>○ Sensitivity analysis                 <ul style="list-style-type: none"> <li>▪ Risk parameters</li> <li>▪ Greek variables                     <ul style="list-style-type: none"> <li>- Vega</li> <li>- Theta</li> <li>- Rho</li> <li>- Gamma</li> </ul> </li> </ul> </li> </ul> </li> </ul> <p><b>→ TRADING SIMULATION:</b><br/> <i>Setup an option position and check the risk parameters and explain why they are at the level as being shown. Interpret the numbers and identify the risks.</i></p> <ul style="list-style-type: none"> <li>▪ Real options             <ul style="list-style-type: none"> <li>○ Manageria decisions / business dedcisions</li> <li>○ Options in the portfolio of oil &amp; gas producers &amp; suppliers                 <ul style="list-style-type: none"> <li>▪ Embedded options in supply contracts                     <ul style="list-style-type: none"> <li>- Validity option of (price) proposal</li> <li>- Take-or-pay options</li> <li>- Volume flexibility</li> </ul> </li> </ul> </li> </ul> </li> </ul> <p><b>→ EXERCISE:</b><br/> <i>Determine the premium in a volume flex supply contract.</i></p> <ul style="list-style-type: none"> <li>- Swing option</li> </ul> <p><b>→ EXERCISE:</b><br/> <i>Optimise your financial performance by clever hedging and allocation of a supply contract with swing optionality.</i></p> <ul style="list-style-type: none"> <li>▪ Embedded options in physical assets             <ul style="list-style-type: none"> <li>- Processing capacity (e.g. refinery)</li> <li>- Storage capacity</li> <li>- Transport capacity</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>▪ Spread options             <ul style="list-style-type: none"> <li>○ Cross-commodity options</li> <li>○ Time spread options</li> <li>○ Location spread options                 <ul style="list-style-type: none"> <li>▪ Valuation of spread options                     <ul style="list-style-type: none"> <li>- Margrabe formula</li> <li>- Monte Carlo simulations</li> </ul> </li> <li>▪ Dynamic hedging of spread options</li> </ul> </li> </ul> </li> </ul> <p><b>→ CASE:</b><br/> <i>Check out a model for spread option valuation and try to understand the drivers of the option value.</i></p> |
| Options | Further tailoring for in-house delivery is possible  |
| Other   | Advanced   |

**“LNG TRADER PROGRAMME”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Shipping</li> <li>➤ Hedging</li> <li>➤ Portfolio optimization</li> </ul>  |
| Target audience                          | All functions   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ The LNG train</li> <li>▪ LNG pricing</li> <li>▪ LNG shipping</li> <li>▪ LNG trading strategies</li> <li>▪ LNG hedging strategies</li> <li>▪ LNG portfolio optimization</li> </ul>   |
| Tutor/instructor                         | T.b.d. <small>(KWa)</small>   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Program                                  | <ul style="list-style-type: none"> <li>▪ Introduction LNG <ul style="list-style-type: none"> <li>○ The LNG Value Chain</li> <li>○ Global Supply &amp; Demand</li> <li>○ Impact geopolitics</li> <li>○ European vs. Asian demand</li> <li>○ Market Players</li> <li>○ LNG contracting</li> </ul> </li> <li>▪ LNG Pricing Dynamics <ul style="list-style-type: none"> <li>○ LNG Price Drivers</li> <li>○ Hub pricing vs. oil indexation</li> <li>○ Henry Hub, TTF and JKM Index</li> <li>○ Trading in different market conditions</li> </ul> </li> <li>▪ Shipping <ul style="list-style-type: none"> <li>○ Shipping terms</li> <li>○ Spot Shipping Market</li> <li>○ LNG freight derivatives</li> </ul> </li> </ul>   |

**CURRICULUM**

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|         | <ul style="list-style-type: none"> <li>○ Freight &amp; Arbitrage</li> <li>○ Cargo Swaps and diversions</li> <li>▪ Trading and Hedging Strategies             <ul style="list-style-type: none"> <li>○ Physical LNG Trading</li> <li>○ Spot, term &amp; tender Trades</li> <li>○ Financial LNG Instruments</li> <li>○ Futures, swaps, options, LNG option spreads</li> <li>○ LNG Forward Hedging</li> </ul> </li> <li>▪ LNG Portfolio Optimization             <ul style="list-style-type: none"> <li>○ LNG Portfolio Components</li> <li>○ Using contractual flexibilities</li> <li>○ Challenges</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation  |

**POWER PURCHASE AGREEMENTS (PPAs)***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Contracting</li> <li>➤ Pricing</li> <li>➤ Risk analysis</li> </ul>   |
| Target audience                          | All functions   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Renewables, incl. solar, wind &amp; hydro <ul style="list-style-type: none"> <li>○ Understand the impact of the fast growing renewable part in the energy mix</li> </ul> </li> <li>▪ Power purchase agreements <ul style="list-style-type: none"> <li>○ Learn about the essentials of the different renewable PPAs</li> <li>○ Know how to execute a risk assessment for a renewable PPA</li> <li>○ Learn how to structure a successful and bankable PPA contract</li> <li>○ Have clear insights in how to negotiate a PPA that works</li> </ul> </li> <li>▪ Guarantees of origin &amp; other attribute certificates</li> <li>▪ Power markets, products, pricing and trading</li> <li>▪ Related concepts, processes and terminology</li> </ul> |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>  |
| Programme                                | <p><i>The global renewable electricity generation capacity is growing with an unprecedented speed. Half of the growth in the power production across the globe is coming from renewables, led by wind, solar PV, and hydropower. Within the next 5 years the share of renewable technologies meeting global energy demand will reach 30% of the total world electricity generation. There are many companies that have a commitment to become 100% green. Corporate Power Purchase Agreement (CPPA) would be the instrument to source the renewable energy. The corporate PPA market offers an avenue to</i></p>  |

*hedge wholesale price risk and secure long-term revenue visibility and price certainty. The CPPA market already took off in the US and Europe and is spreading across the globe. So, there are valuable lessons to be learned. A policy shift towards competitive pricing mechanisms drives renewables growth. Overall, continuous cost reductions are expected to make renewables more competitive with new coal and natural gas plants in an increasing number of countries. The introduction of additional competitive auctions for long-term PPAs in key countries; and a growing private or corporate PPA market that takes advantage of wind and solar PV cost reductions, will be a very interesting instruments to further deploy renewable power projects. Even with renewable energy technologies becoming increasingly competitive, appropriate policies and market design are critical. Governments should introduce measures to tackle policy and regulatory uncertainties as well as grid integration and financing challenges. During this intensive and highly interactive 2-day hands-on course the expert trainer will provide a comprehensive guidance and tips and tricks with regards to successfully negotiating and signing a bankable renewable PPA.*

### **DAY 1**

#### **Corporate PPAs in today's power markets**

- Impact energy transition on Power Markets
- Renewable Corporate Sourcing
- What is a Corporate PPA
- Benefits for sellers and corporate buyers
- Support Mechanisms and Subsidies
- Role Renewable attributes
- Additionality
- Negative Prices
- Regulatory Barriers
- [Case Study](#): Example Fixed Price PPA Structure

#### **Common PPA structures**

- Physical or sleeved
- Virtual
- Direct Wire
- Multi-buyer
- Cross Border
- Hybrid or multi-technology
- [Case Study](#): Budweiser Cross Border Virtual PPA

#### **PPA Key Risks & Assessment**

- Risk Identification
- Project Risks & Mitigation
- Risk Allocation and Mitigation
- Counterparty Credit risk
- Risks Construction & Operational Phase
- Other important contract risks to assess
- [Case Study](#): Example PPA Risk Assessment

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|         | <p><b>Pricing Structures</b></p> <ul style="list-style-type: none"> <li>▪ Fixed Pricing vs. Index Pricing</li> <li>▪ Option Structures</li> <li>▪ <b>Case:</b> Annual Baseload Fixed Pricing Structure + Cap &amp; Floor Pricing</li> </ul> <p><b>DAY 2</b></p> <p><b>Volume structures and risk allocation</b></p> <ul style="list-style-type: none"> <li>▪ Pay-as-produced</li> <li>▪ Pre-defined profile</li> <li>▪ All day peak load</li> <li>▪ Annual Baseload</li> <li>▪ Monthly Baseload</li> <li>▪ <b>Case Studies:</b> Example Pre-defined Profile and Baseload PPA</li> </ul> <p><b>PPA Risk Mitigation Structures</b></p> <ul style="list-style-type: none"> <li>▪ Volume Firming Agreement</li> <li>▪ Proxy Generation</li> </ul> <p><b>Key Contract features Renewable Corporate PPA</b></p> <ul style="list-style-type: none"> <li>▪ Duration</li> <li>▪ Milestones &amp; penalties</li> <li>▪ Transmission issues</li> <li>▪ Point of Delivery</li> <li>▪ Curtailment</li> <li>▪ Termination events</li> <li>▪ <b>Case Study:</b> the EFET Standard PPA Contract</li> </ul> <p><b>Bankability &amp; Financing Renewable PPAs</b></p> <ul style="list-style-type: none"> <li>▪ What is 'bankability'?</li> <li>▪ Key bankability issues</li> <li>▪ Project Finance Structures</li> <li>▪ Role of Risk Mitigation</li> <li>▪ Key Project Agreements</li> <li>▪ Potential Sources of Funding</li> <li>▪ Credit Enhancement</li> </ul> <p><b>How to negotiate the best PPA deal</b></p> <ul style="list-style-type: none"> <li>▪ The 4 golden rules</li> <li>▪ Understand the interests of the different stakeholders</li> <li>▪ How to structure the negotiations</li> <li>▪ What are the pitfalls and how to avoid them</li> </ul> <p><b>Final Q&amp;A</b></p> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation  |



**“ANCILLARY SERVICES”***BESPOKE IN-COMPANY WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 2 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>             |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Hedging</li> </ul>   |
| Target audience                          | All functions  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Power generation capacity &amp; flexibility</li> <li>▪ Battery storage (BESS)</li> <li>▪ Ancillary services</li> <li>▪ Reserve power &amp; reserve markets</li> <li>▪ Balancing &amp; balancing markets</li> <li>▪ Intraday trading</li> <li>▪ Optionalities</li> </ul>  |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Flexibility &amp; Optionality”</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Power generation <ul style="list-style-type: none"> <li>○ Different types of assets</li> <li>○ Flexibility related to assets</li> <li>○ Intermittency</li> <li>○ Curtailment</li> </ul> </li> <li>▪ Power storage <ul style="list-style-type: none"> <li>○ Battery energy storage systems (BESS)</li> <li>○ Flexibility</li> <li>○ Allocation to different reserve markets</li> </ul> </li> <li>▪ Balancing <ul style="list-style-type: none"> <li>○ Balancing regimes</li> <li>○ Role of the transmission system operator</li> <li>○ Organisation</li> <li>○ Nomination</li> <li>○ Renomination</li> </ul> </li> <li>▪ Reserve markets <ul style="list-style-type: none"> <li>○ Power control</li> </ul> </li> </ul> |

CURRICULUM

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|         | <ul style="list-style-type: none"> <li>○ Frequency control</li> <li>○ Load regulation</li> <li>○ Spinning reserve</li> <li>○ Non-spinning reserve</li> <li>○ Replacement reserve</li> <li>○ Voltage support</li> <li>○ FCR</li> <li>○ aFRR</li> <li>○ mFRR</li> <li>○ other</li> <li>▪ Impact for market &amp; market participants             <ul style="list-style-type: none"> <li>○ Investments</li> <li>○ Spinning reserve</li> <li>○ Reserve capacity</li> <li>○ Opportunities &amp; risks</li> <li>○ Price volatility</li> </ul> </li> <li>▪ Strategies             <ul style="list-style-type: none"> <li>○ Algorithmic trading</li> <li>○ Optimisation of assets</li> <li>○ Physical flow analysis</li> <li>○ Load forecasting</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation, advanced   |

**“TRADING & RISK-RELATED OPERATIONS”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Trading Simulation Platform access to run simulations</li> <li>○ Very interactive sessions due to exercises, simulations and case studies + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading-related operations</li> <li>➤ Risk-related operations</li> </ul>  |
| Target audience                          | Front office, Middle office & Back office staff  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Trading-related operations</li> <li>▪ Risk-related operations</li> </ul>   |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Clearing &amp; Settlement”</li> <li>✓ Trading Simulation Platform: access to run trading simulation <ul style="list-style-type: none"> <li>- Sim “Futures - at position level”</li> <li>- Sim “Futures - at portfolio level”</li> <li>- Sim “Options – Call/Put”</li> </ul> </li> <li>✓ Excel file showing the financial performance of a term contract position</li> <li>✓ Excel file showing the financial performance of an option position</li> <li>✓ Pre-read materials</li> <li>✓ Handout (slides)</li> </ul>   |
| Program                                  | <ul style="list-style-type: none"> <li>▪ The business, control and support functions and their inter-relations</li> <li>▪ The back office <ul style="list-style-type: none"> <li>○ Trading operations</li> <li>○ Tasks &amp; responsibilities</li> </ul> </li> <li>▪ Administrative processes <ul style="list-style-type: none"> <li>○ Explaining the back office tasks &amp; responsibilities</li> <li>○ About invoicing &amp; payments; accounts payable &amp; receivable</li> <li>○ Concerning nomination, allocation &amp; reconciliation</li> <li>○ Valuation of individual positions and the entire portfolio</li> </ul> </li> <li>▪ Straight through processing <ul style="list-style-type: none"> <li>○ The deal life cycle; from deal capture and trade confirmation to delivery, incl. clearing, margining &amp; collateralisation and settlement</li> </ul> </li> <li>▪ End-of-day processes <ul style="list-style-type: none"> <li>○ About daily (or periodic) reporting; End-of-day/month/year</li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>○ Covering position reports, P/L statements &amp; performance management</li> <li>▪ Contract management <ul style="list-style-type: none"> <li>○ Market access arrangements <ul style="list-style-type: none"> <li>▪ Broker setup <ul style="list-style-type: none"> <li>- Brokerage selection</li> <li>- Brokerage agreements</li> <li>- Fee schedule negotiations</li> </ul> </li> <li>→ <b>CASE STUDY:</b><br/><i>Identify energy brokerage firms as a first step in broker selection. What criteria are relevant to make the selection?</i></li> </ul> </li> <li>▪ Exchange memberships <ul style="list-style-type: none"> <li>- Membership or direct market access via General Clearing Member?</li> <li>- Contact member relations department</li> <li>- Rulebook acceptance</li> <li>- Margin account – Cash transfer</li> </ul> </li> <li>→ <b>CASE STUDY:</b><br/><i>Analyse rulebook of an exchange of preference and identify what aspects are covered/included.</i></li> </ul> </li> <li>▪ Clearing <ul style="list-style-type: none"> <li>○ Counterparty (credit) risk</li> <li>○ The aftermath of the global financial crisis 2008-2009 <ul style="list-style-type: none"> <li>▪ Lehman Brothers bankruptcy &amp; The Credit Crisis</li> <li>▪ G-20 meeting in Pittsburg</li> <li>▪ Regulations (e.g. the US Dodd-Frank Act)</li> </ul> </li> <li>→ <b>CASE STUDY:</b><br/><i>The EU regulation EMIR sets rules for clearing and central counterparties.</i></li> <li>○ What is clearing? Which clearing activities take place?</li> <li>○ Novation</li> <li>○ Central counterparty clearing</li> <li>○ OTC-cleared</li> <li>○ Central counterparty &amp; Clearing members</li> <li>○ Brokers &amp; OTC give up services</li> <li>○ Default fund</li> </ul> </li> <li>▪ Margining <ul style="list-style-type: none"> <li>○ The process of margining <ul style="list-style-type: none"> <li>▪ Types of margin <ul style="list-style-type: none"> <li>• Initial margin – to cover potential loss during close-out phase</li> <li>• Variation margin – to cover unrealised loss on contract</li> <li>• Maintenance margin</li> </ul> </li> <li>▪ Margin call <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b><br/><i>Setup a long or short futures position and analyse the margin requirements you will face on the basis of market dynamics.</i></li> </ul> </li> <li>▪ Cross-margin <ul style="list-style-type: none"> <li>→ <b>TRADING SIMULATION:</b><br/><i>Setup a futures spread position (time spread / location spread) and analyse the margin requirements you will face. Explain the result. What are the consequences of long-short positions?</i></li> </ul> </li> </ul> </li> </ul> </li> </ul> |
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|  | <p style="text-align: center;"><i>What role does price correlation play?</i></p> <ul style="list-style-type: none"> <li>○ Concerning correlation, haircut &amp; cross-margin</li> <li>○ Covering discounts or reduction on deposits</li> <li>▪ Netting       <ul style="list-style-type: none"> <li>○ Covering the concept of netting           <ul style="list-style-type: none"> <li>▪ Offsetting opposing volumes and/or values</li> </ul> </li> <li>○ Bilateral &amp; multilateral netting           <ul style="list-style-type: none"> <li>▪ Master agreements &amp; counterparty credit risk</li> <li>▪ Central counterparty (CCP)               <ul style="list-style-type: none"> <li>→ <b>EXERCISE:</b></li> <li><i>Consider numerous transactions you entered into and Determine your netted position and exposure in case of bilateral netting and in case of multilateral netting.</i></li> </ul> </li> </ul> </li> <li>○ Types of netting           <ul style="list-style-type: none"> <li>▪ Netting by novation</li> <li>▪ Close-out netting</li> <li>▪ Settlement netting</li> </ul> </li> </ul> </li> <li>▪ Settlement       <ul style="list-style-type: none"> <li>○ Settlement processes in general           <ul style="list-style-type: none"> <li>▪ Delivery versus payment</li> <li>▪ Invoicing</li> </ul> </li> <li>○ Settlement of derivatives           <ul style="list-style-type: none"> <li>▪ Settlement of futures               <ul style="list-style-type: none"> <li>• Concerning daily settlement &amp; final settlement</li> <li>• Settlement procedures; settlement date or period</li> <li>• Physical delivery vs. cash settlement</li> <li>→ <b>DEBATE:</b></li> <li><i>What to do if your power futures contract matures and settlement will oblige you to make/take delivery in Germany, while your operations are based in Spain?</i></li> <li>→ <b>CASE:</b></li> <li><i>Analyse the contract specifications, including the settlement mechanisms of a power futures contract.</i></li> </ul> </li> <li>▪ Settlement of options               <ul style="list-style-type: none"> <li>• Exercise &amp; assignment</li> </ul> </li> <li>→ <b>TRADING SIMULATION:</b></li> <li><i>Setup a long option position and decide at maturity (end-of-sim) whether you would like to exercise your right. If so, what will happen to your position?</i></li> </ul> </li> </ul> </li> <li>▪ Market risk       <ul style="list-style-type: none"> <li>○ Risk assessment - Risk quantification</li> <li>○ Value at risk – daily reporting           <ul style="list-style-type: none"> <li>• Risk limit reports</li> <li>• P/L limit reports</li> <li>• Volume limit reports</li> <li>• Price limit reports</li> </ul> </li> <li>○ Stress testing – periodic reporting</li> </ul> </li> <li>▪ Counterparty risk management       <ul style="list-style-type: none"> <li>○ Counterparty onboarding</li> <li>○ Due diligence:           <ul style="list-style-type: none"> <li>▪ KYC procedure</li> <li>▪ Creditworthiness scan</li> <li>▪ Master agreement (e.g. ISDA, Shell/BP framework)</li> </ul> </li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>▪ Credit support annex (CSA)</li> <li>○ Credit risk reports             <ul style="list-style-type: none"> <li>▪ Credit limits &amp; credit exposures                 <ul style="list-style-type: none"> <li>• Trading halt</li> </ul> </li> <li>▪ Clearing                 <ul style="list-style-type: none"> <li>• Clearing houses</li> <li>• Clearing members</li> </ul> </li> <li>▪ Collateralisation &amp; margining</li> <li>▪ Defaults &amp; the default waterfall                 <ul style="list-style-type: none"> <li>→ <b>CASE:</b><br/> <i>Nasdaq case: Einar Aas</i><br/> <i>Replenishment of default fund by clearing members due to socialisation of losses.</i> </li> </ul> </li> </ul> </li> <li>▪ Liquidity risk             <ul style="list-style-type: none"> <li>○ Market liquidity                 <ul style="list-style-type: none"> <li>▪ The consequences of a deteriorating liquidity for position limits, value at risk limits</li> </ul> </li> <li>○ Finance liquidity                 <ul style="list-style-type: none"> <li>▪ Money management</li> <li>▪ Cash transfers - Funding</li> <li>▪ The level of the working capital impacts the market activity</li> </ul> </li> </ul> </li> <li>▪ The circle market risk - credit risk - liquidity risk             <ul style="list-style-type: none"> <li>○ Balancing the ratios</li> <li>○ Systemic risk</li> </ul> </li> <li>▪ Compliance risk             <ul style="list-style-type: none"> <li>○ Publication of inside information – Transparency to create level playing field</li> <li>○ Reporting of suspicious behaviour to regulatory authority</li> <li>○ Sanctioning may involve the company and/or employees                 <ul style="list-style-type: none"> <li>▪ Administrative &amp; Criminal sanctions (incl. sentencing)</li> </ul> </li> <li>○ Naming &amp; shaming hurts firm’s reputation – Reputational risk</li> <li>○ Incorrect or incomplete reporting of data</li> <li>○ Incorrect or incomplete publication of inside information – Unlawful disclosure</li> <li>○ An ineffective trade surveillance or surveillance function</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Advanced  |

**“TRADING PSYCHOLOGY” – MENTAL MANAGEMENT**  
*BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Pre-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level</li> <li>○ Pre-read materials (max. 60 min.)</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive sessions due to exercises + even more so due to tutor’s character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Assessment of knowledge level + reporting on results</li> <li>○ Certification</li> <li>○ Live digital session with tutor for evaluation of main session + reflection</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading psychology</li> <li>➤ Risk management</li> <li>➤ Self-control</li> </ul>  |
| Target audience                          | Front office staff & HR  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Behavioural finance</li> <li>▪ Mental traps</li> <li>▪ Biases, heuristics, framing</li> <li>▪ Solutions: mental management, trading plan, money management, limits</li> </ul>  |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Handbook “Trading psychology, behaviour &amp; conduct”</li> <li>✓ Handout (slides)</li> </ul>   |
| Program                                  | <p>Introduction</p> <p>Behavioral finance</p> <ul style="list-style-type: none"> <li>▪ Relationship economics &amp; psychology</li> <li>▪ Decision-making &amp; cognitive errors</li> <li>▪ Emotional versus rational decision-making</li> <li>▪ Situationalism</li> <li>▪ Cognitive biases <ul style="list-style-type: none"> <li>- Heuristics</li> <li>- Framing</li> <li>- Market inefficiencies</li> </ul> </li> </ul> <p>→ <b>EXERCISE:</b><br/> <i>Anchoring</i></p> <p>→ <b>EXERCISE:</b><br/> <i>Sentiment</i></p> <p>→ <b>EXERCISE:</b><br/> <i>Timing</i></p> <p>→ <b>EXERCISE:</b><br/> <i>The quiz dilemma &amp; punishment</i></p> <p>→ <b>EXERCISE:</b><br/> <i>Misinterpretation of data</i></p>      |

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|  | <p>→ <b>EXERCISE:</b><br/><i>Expectations</i></p> <p>→ <b>EXERCISE:</b><br/><i>Perceptions</i></p> <ul style="list-style-type: none"> <li>▪ Using patterns of irrationality</li> </ul> <p>A trader's mind</p> <ul style="list-style-type: none"> <li>▪ Battle of the strongest</li> <li>▪ Adrenaline</li> <li>▪ Ratio versus emotion</li> <li>▪ Self-destruction</li> <li>▪ Decision making</li> <li>▪ Maintain or liquidate a position</li> <li>▪ Data &amp; news</li> <li>▪ Analysis</li> <li>▪ Day of a trader</li> <li>▪ Organizational structure</li> <li>▪ Bonus structure</li> </ul> <p>Philosophy on trading psychology</p> <ul style="list-style-type: none"> <li>▪ Sports</li> <li>▪ Preparation</li> </ul> <p>Well-performing traders</p> <ul style="list-style-type: none"> <li>▪ Fear is an obstacle</li> <li>▪ High sensitivity</li> <li>▪ Manage the consequences of adverse experiences</li> <li>▪ Skills on top of knowledge</li> <li>▪ Psychological hurdles</li> <li>▪ More psychology</li> </ul> <p>The trader has to have self-knowledge</p> <ul style="list-style-type: none"> <li>▪ The nature of the mental environment</li> <li>▪ Darwinism: Why would one learn to adapt?</li> <li>▪ Blocking new concepts</li> <li>▪ Achieving goals and the related dynamics</li> </ul> <p>Mental management by the trader</p> <ul style="list-style-type: none"> <li>▪ Optimizing timing</li> <li>▪ Selfishness of traders</li> <li>▪ Managing mental energy</li> <li>▪ The advantages of mental management</li> <li>▪ Effectuating change</li> </ul> <p>The trader's discipline as virtue</p> <ul style="list-style-type: none"> <li>▪ The psychology of price fluctuations</li> <li>▪ Market behaviour as it is</li> <li>▪ Steps to success</li> </ul> <p>A trading plan creates consistency</p> <ul style="list-style-type: none"> <li>▪ Components of a trading plan</li> <li>▪ Set of rules as supportive tool</li> </ul> <p>→ <b>ASSIGNMENT:</b><br/><i>Create your plan</i></p> <p>Money management</p> <ul style="list-style-type: none"> <li>▪ Drag down limit</li> <li>▪ Loss limit</li> <li>▪ Max percentage of total capital at stake</li> </ul> <p>→ <b>ASSIGNMENT:</b><br/><i>Identify your (potential) controls</i></p> <p>Trading rules</p> |
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CURRICULUM

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|         | <ul style="list-style-type: none"> <li>▪ No net short option positions</li> <li>▪ Close far out-of-the-money short option positions</li> <li>▪ Maximum Delta position</li> <li>▪ Limit overnight positions</li> <li>▪ Be aware of news release timing</li> <li>▪ Piece in mind vs unrest</li> </ul> <p>→ <b>ASSIGNMENT:</b><br/><i>Define your strategy</i></p> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation  |

**“HYDROGEN MARKETS & TRADING”***BESPOKE IN-COMPANY WORKSHOP – In English language*

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| Duration                                 | In total: 3 days<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive sessions due to exercises + even more so due to tutor's character &amp; presentation style</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Trading</li> <li>➢ Contracting &amp; contract management</li> <li>➢ Pricing</li> <li>➢ Risk management</li> <li>➢ Derivatives</li> </ul>   |
| Target audience                          | Front, middle & back office staff   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ The supply chain</li> <li>▪ Contracting</li> <li>▪ Trading</li> <li>▪ Financing</li> <li>▪ Certification</li> <li>▪ Pricing</li> <li>▪ Risks</li> </ul>   |
| Tutor/instructor                         | T.b.d. <small>(Kwa)</small>   |
| Materials provided                       | ✓ Handout (slides)  |
| Program                                  | <p><b>DAY 1</b></p> <ul style="list-style-type: none"> <li>▪ <b>Introduction</b> <ul style="list-style-type: none"> <li>○ Net Zero Carbon &amp; hydrogen</li> <li>○ Glossary</li> <li>○ Is hydrogen a hype or here to</li> <li>○ Status Quo Low carbon Hydrogen</li> <li>○ The elephant in the room- renewable volumes</li> <li>○ Possible barriers</li> </ul> </li> <li>▪ <b>The Colours of Low Carbon Hydrogen</b> <ul style="list-style-type: none"> <li>○ The Different Colours</li> <li>○ Blue Hydrogen <ul style="list-style-type: none"> <li>▪ Carbon Capture Usage and Storage (CCUS)</li> <li>▪ Supply and Demand</li> </ul> </li> <li>○ Green Hydrogen <ul style="list-style-type: none"> <li>▪ Costs electrolyzers</li> <li>▪ Price 1 kg of green hydrogen</li> </ul> </li> </ul> </li> <li>▪ <b>The Hydrogen Economy</b> <ul style="list-style-type: none"> <li>○ History, current &amp; future status</li> <li>○ Benefits &amp; deployment of hydrogen</li> <li>○ Role in the Energy Transition &amp; Carbon Pricing</li> <li>○ Regional Demand Centers</li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>○ Global Supply Centers</li> <li>○ Hydrogen distribution and global supply chain</li> <li>○ End applications</li> <li>○ Implementation: bringing it all together</li> <li>▪ <b>Existing and Emerging Use Cases</b> <ul style="list-style-type: none"> <li>○ Chemical plants</li> <li>○ Ammonia</li> <li>○ Petroleum refining</li> <li>○ Electricity generation</li> <li>○ Heavy transport</li> <li>○ Industrial heating</li> <li>○ Case Study: Green Steel</li> </ul> </li> </ul> <p><b>DAY 2</b></p> <ul style="list-style-type: none"> <li>▪ <b>Hydrogen Trading Development</b> <ul style="list-style-type: none"> <li>○ Hydrogen Market Evolution</li> <li>○ Role storage &amp; Transport</li> <li>○ Compliance with clear standards</li> <li>○ Liquidity</li> <li>○ Integrating imported hydrogen</li> <li>○ Role Ammonia</li> <li>○ Role subsidies and policies</li> <li>○ Lessons from electricity, gas and carbon</li> </ul> </li> <li>▪ <b>Certification</b> <ul style="list-style-type: none"> <li>○ Government-imposed standard</li> <li>○ Third-party certifications</li> <li>○ International coordination</li> <li>○ Comparison to green LNG</li> <li>○ Case Study: Certifhy</li> </ul> </li> <li>▪ <b>Hydrogen Price Index Initiatives</b> <ul style="list-style-type: none"> <li>○ Price transparency &amp; industry acceptance</li> <li>○ S&amp;P Platts</li> <li>○ HYDRIX – EEX Germany</li> <li>○ HYCLICKS -HyXchange Netherlands</li> <li>○ ICIS</li> <li>○ Global Trading</li> </ul> </li> <li>▪ <b>Hydrogen Trade Routes</b> <ul style="list-style-type: none"> <li>○ Potential exporters and their drivers</li> <li>○ Demand Centers</li> <li>○ Transport <ul style="list-style-type: none"> <li>▪ Pipeline</li> <li>▪ Shipping</li> <li>▪ Ammonia</li> </ul> </li> </ul> </li> </ul> <p><b>DAY 3</b></p> <ul style="list-style-type: none"> <li>▪ <b>Introducing Hydrogen Offtake contracts</b> <ul style="list-style-type: none"> <li>○ Contractual Arrangements</li> <li>○ Renewable power sourcing</li> <li>○ Hydrogen Sales</li> <li>○ Multi -project opportunities</li> </ul> </li> <li>▪ <b>Hydrogen Contract Models</b> <ul style="list-style-type: none"> <li>○ Standardisation</li> </ul> </li> </ul> |
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|         | <ul style="list-style-type: none"> <li>○ Term, Financing &amp; Bankability</li> <li>○ Tolling vs. Sale and Purchase Model</li> <li>○ Factors choice Tolling vs. SPA</li> <li>○ Volumes &amp; Pricing</li> <li>○ Take-or-pay Model</li> <li>○ Take-and-pay Model</li> <li>○ Pricing Formulas</li> <li>○ Price review provisions</li> <li>○ Liquidated Damages</li> <li>▪ <b>Key Risks</b> <ul style="list-style-type: none"> <li>○ Risk Assessment</li> <li>○ Water Risk</li> <li>○ Off-taker Credit Risk</li> <li>○ Feedstock supply disruptions</li> <li>○ Timeline risks</li> <li>○ Technology Risk</li> <li>○ Force Majeure</li> <li>○ Change in Law and taxation</li> </ul> </li> <li>▪ <b>Financing</b> <ul style="list-style-type: none"> <li>○ Financing Hydrogen Projects</li> <li>○ Project Finance</li> <li>○ End-to-end financing</li> <li>○ Lessons from the LNG and Mining sector</li> <li>○ Green Financing</li> </ul> </li> <li>▪ <b>Hydrogen Trading Hubs Evolution</b> <ul style="list-style-type: none"> <li>○ The business reasons for a hub</li> <li>○ Stages of development of market hubs in oil and gas</li> <li>○ Hydrogen certification &amp; Guarantees of origin</li> <li>○ Current initiatives &amp; Possible Locations</li> <li>○ Key Characteristics of a successful Hydrogen Hub</li> <li>○ The Way Forward</li> </ul> </li> <li>▪ <b>Closing Q&amp;A and discussion</b></li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation   |

**“ENERGY MARKETS & TRADING”**

*PUBLIC COURSE – In English language*

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| Duration                                 | In total: 2 sequential days<br>Dates: 6-7 September 2023<br>Timings: 10:00-16:00 (CET)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor’s character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Trade, analysis, sales</li> <li>➢ Risk, compliance, surveillance, audit</li> <li>➢ Trade operations</li> </ul>   |
| Target audience                          | New recruits and any other professional in the commodity and energy markets.  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ Master the energy supply chain</li> <li>▪ Being able to identify the risks and opportunities of energy producing and supplying companies</li> <li>▪ Understand the role of the trading function in commodity &amp; energy companies</li> <li>▪ Become aware of trading processes, concepts and related terminology</li> <li>▪ Learn the role of the business, control and support functions in a trading organisations</li> <li>▪ Understand the parties around a company with a trading function and their relationships</li> <li>▪ Familiarise with the players in the commodity &amp; energy markets</li> <li>▪ Master risk management within a trading organisation</li> <li>▪ Getting grip on market abuse and the prevention and detection of it</li> </ul>  |
| Tutor/instructor                         | t.b.d.  |
| Materials provided                       | ✓ Handout (slides)  |
| Programme                                | <p>Supply chain</p> <ul style="list-style-type: none"> <li>▪ Oil value chain: Up-, mid- &amp; downstream, crude, grades, refining, refinery products</li> <li>▪ Gas value chain: Natural gas and LNG, transport &amp; storage</li> <li>▪ Coal supply chain: Grades, shipping, chartering</li> <li>▪ Electricity value chain: investment, maintenance, marginal cost of production, the merit order, the impact of renewables on the price level and volatility, the impact of an emission trading system</li> </ul> <p>Markets</p> <ul style="list-style-type: none"> <li>▪ Physical versus financial markets</li> <li>▪ Balancing, spot and term markets</li> <li>▪ On-venue and off-venue <ul style="list-style-type: none"> <li>- Exchange: Membership &amp; cost structure, clearing</li> <li>- OTC: Brokerage services &amp; brokerage agreement, master agreements</li> </ul> </li> </ul> <p>Products</p> |

|         |  |
|---------|--|
|         | <ul style="list-style-type: none"> <li>▪ Supply contracts (Take-or-pay, Volume flexibility, Swing optionality)</li> <li>▪ Derivative contracts (Futures versus forward contracts, Options, Swaps)</li> <li>▪ Pricing &amp; Negotiating</li> </ul> <p>Pricing</p> <ul style="list-style-type: none"> <li>▪ Price formation at trading venue</li> <li>▪ Central order book</li> <li>▪ Order submission, amendment &amp; cancellation</li> <li>▪ Market making</li> </ul> <p>Trading</p> <ul style="list-style-type: none"> <li>▪ Trading tools</li> <li>▪ Trading strategies</li> <li>▪ Trading technicalities</li> <li>▪ Trading operations</li> <li>▪ Settlement</li> </ul> <p>Trading – Asset &amp; portfolio management</p> <ul style="list-style-type: none"> <li>▪ Oil markets &amp; trading: Crack spread</li> <li>▪ Gas markets &amp; trading: Storage capacity trading &amp; time spread, transport capacity trading &amp; location spread</li> <li>▪ Coal markets &amp; trading: Shipping &amp; freight markets and incoterms</li> <li>▪ Electricity markets &amp; trading: Continuous trading versus auction, the day-ahead power market, spark, dark &amp; black spreads, PPAs, attribute energy certificates (GOs, RECs, I-RECs)</li> <li>▪ Carbon markets &amp; emission rights trading: Clean/green spreads, emission trading systems, UN initiatives, attribute energy certificates</li> </ul> <p>Organisational setup</p> <ul style="list-style-type: none"> <li>▪ Asset management, Portfolio management, Risk management</li> <li>▪ Trading division (front, middle &amp; back office)</li> <li>▪ Market risk, counterparty risk, liquidity risk             <ul style="list-style-type: none"> <li>- Counterparty (credit) risk (collateralisation - initial &amp; variation margin)</li> <li>- Market risk (value at risk &amp; stress testing)</li> <li>- Liquidity risk (funding liquidity &amp; market liquidity)</li> </ul> </li> <li>▪ Reporting</li> <li>▪ Limit structures</li> </ul> <p>Market abuse regulations &amp; compliance</p> <ul style="list-style-type: none"> <li>▪ Regimes around (incl. US and EU)</li> <li>▪ Prohibitions (insider trading &amp; market manipulation)</li> <li>▪ Obligations (publication of inside information, reporting of data, market monitoring &amp; trade surveillance)</li> <li>▪ Regulators across the globe (differentials &amp; collaboration/interaction)</li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Foundation level   |

See also: <https://www.entrima.org/product/2-day-masterclass-energy-energy-markets-energy-trading/>

**“THE ENERGY TRANSITION” – THE INS & OUTS REGARDING RELATED MARKETS**  
*IN-HOUSE WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor's character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trade</li> <li>➤ Energy transition</li> <li>➤ Compliance</li> </ul>   |
| Target audience                          | This course is suitable for any professional who wants to familiarise with the basics of carbon markets and the related aspects of relevance. Hence, the course is targeted particularly at those who are considered starters/juniors in this field of expertise.  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The basics of green energy</li> <li>▪ The fundamentals of emission rights</li> <li>▪ The foundation of carbon markets and emissions trading</li> <li>▪ Market mechanisms</li> <li>▪ Emission trading schemes &amp; the related allowances</li> <li>▪ Carbon credits</li> <li>▪ Attribute energy certificates being part of the energy transition</li> </ul>   |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | ✓ Handout (slides)   |
| Programme                                | <p>The following topics will be covered:</p> <p>Background: Climate change &amp; energy transition</p> <ul style="list-style-type: none"> <li>▪ Decrease energy consumption via (improved) energy efficiency</li> <li>▪ Renewability</li> <li>▪ Emission (rights) trading</li> </ul> <p>Emission rights vs. Carbon credits</p> <ul style="list-style-type: none"> <li>▪ National or regional Emission Trading Schemes (ETSs) <ul style="list-style-type: none"> <li>-European Union Emission trading scheme (EU ETS) including European Union Allowances (EUAs)</li> <li>- Other ETSs</li> </ul> </li> <li>▪ United Nations projects <ul style="list-style-type: none"> <li>- Clean Development Mechanism (CDM) – Certified Emiss. Rights (CERs)</li> <li>- Joint Implementaion (JI) – Emission Reduction Units (ERUs)</li> </ul> </li> <li>▪ Projects (Authorised &amp; Unauthorised)</li> </ul> <p>Attribute certificates</p> <ul style="list-style-type: none"> <li>▪ RECs, iRECs, Green certificates, Guarantee of origin</li> <li>▪ Institutions</li> </ul> |

CURRICULUM

|         |   |
|---------|---|
|         | <ul style="list-style-type: none"> <li>▪ High quality standards</li> </ul> <p>Frameworks &amp; standards</p> <ul style="list-style-type: none"> <li>▪ Gold standard</li> <li>▪ Verra</li> <li>▪ Other</li> </ul> <p style="padding-left: 40px;">Example: Certi-Q &amp; Vertogas</p> <p>Registers</p> <ul style="list-style-type: none"> <li>▪ National registry</li> <li>▪ Accounts</li> </ul> <p>Trading places</p> <ul style="list-style-type: none"> <li>▪ Bilateral deals (Master agreements, Credit support, including limits &amp; collateralisation, and Brokerage services)</li> <li>▪ Exchanges (Members &amp; memberships, Margining, Leverage)</li> </ul> <p>Market design</p> <ul style="list-style-type: none"> <li>▪ Continuous trading (Exchanges, Opening hours, Intraday price fluctuations)</li> <li>▪ Auctioning (Auction methodology, Blind auction, Volume allocation, Market clearing price setting)</li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |



**“CAPACITY VALUATION & ASSET HEDGING” – FLEXIBILITY & OPTIONALITY***IN-HOUSE WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (CET)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor's character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Finance &amp; Accounting</li> <li>➤ Quantitative analysis</li> <li>➤ Valuation</li> <li>➤ Hedging</li> </ul>  |
| Target audience                          | Finance specialists, asset managers, portfolio managers, traders, originators.  |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ Managerial decisions in the business of an electric utility.</li> <li>▪ Business choices to be made based on asset base and sourcing &amp; sales portfolio.</li> <li>▪ Flexibility in physical assets</li> <li>▪ Optionality in supply contracts</li> <li>▪ Being able to identify choices and understand the related room for them.</li> <li>▪ Being able to convert managerial decisions in terms of options.</li> <li>▪ Understand the type and level of flexibility in an asset or portfolio.</li> <li>▪ Understand how flexibility can be modelled.</li> <li>▪ Understand the advantage of modelling and why this supports valuation and hedging.</li> <li>▪ Master the option theory and its application on the flexibility in a firm's physical and financial assets.</li> <li>▪ Master related processes and concepts, as well as relevant terminology.</li> <li>▪ Become an expert in the pricing and valuation of flexibility.</li> <li>▪ Get grip on the way to handle flexibility and capitalise on it.</li> </ul> |
| Tutor/instructor                         | T.b.d.  |
| Materials provided                       | ✓ Handout (slides)  |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Fundamentals &amp; essentials of options <ul style="list-style-type: none"> <li>○ Rights &amp; (potential) obligations</li> <li>○ Risk-reward ratio</li> </ul> </li> <li>▪ Valuation of options and optionality <ul style="list-style-type: none"> <li>○ Models &amp; parameters</li> <li>○ Exotic options vs vanilla options</li> </ul> </li> <li>▪ Flexibility in supply contracts <ul style="list-style-type: none"> <li>○ Validity time of proposal</li> <li>○ Take or pay constructions</li> <li>○ Volume flexibility</li> </ul> </li> </ul>  |

CURRICULUM

|         |  |
|---------|--|
|         | <ul style="list-style-type: none"> <li>▪ Optimisation             <ul style="list-style-type: none"> <li>○ Swing optionality                 <ul style="list-style-type: none"> <li>▪ Capitalisation</li> </ul> </li> </ul> </li> <li>▪ Flexibility on physical assets             <ul style="list-style-type: none"> <li>○ Capacities                 <ul style="list-style-type: none"> <li>▪ Processing capacity (combined production &amp; consumption capacity)</li> <li>▪ Storage capacity</li> <li>▪ Transport capacity</li> </ul> </li> <li>○ Margin                 <ul style="list-style-type: none"> <li>▪ Spreads</li> <li>▪ Spread trading</li> </ul> </li> </ul> </li> <li>▪ Asset-backed trading             <ul style="list-style-type: none"> <li>○ Dynamic hedging &amp; financial optimisation</li> <li>○ Locking-in intrinsic value &amp; monetising extrinsic value</li> <li>○ Delta-hedging</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Intermediate and advanced level  |

**“PRICE VOLATILITY & MARKET RISK MANAGEMENT”**

*IN-HOUSE WORKSHOP – In English language*

|  |  |
|--|--|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)   |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor’s character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Trading</li> <li>➢ Analysis</li> <li>➢ Risk management</li> </ul>   |
| Target audience                          | Professionals in a business, control or support function, including trading operations experts; not for quantitative analysts.   |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ Mastering the concept ‘price volatility’</li> <li>▪ Being able to interpret volatility numbers</li> <li>▪ Understanding the impact of price volatility on consumption prices</li> <li>▪ Understanding the impact of price volatility on a trader’s working capital</li> <li>▪ Understanding the impact on cash management</li> <li>▪ Understanding the impact on trading activity</li> </ul>  |
| Tutor/instructor                         | T.b.d.   |
| Materials provided                       | ✓ Handout (slides)   |
| Programme                                | <p>About price levels and price level fluctuations, as well as price differentials and the dynamics of those differentials:</p> <ul style="list-style-type: none"> <li>▪ Price volatility – The concept <ul style="list-style-type: none"> <li>○ Risk vs. opportunity</li> </ul> </li> <li>▪ Types of volatility <ul style="list-style-type: none"> <li>○ Future volatility</li> <li>○ Estimated/expected volatility</li> <li>○ Implied volatility</li> </ul> </li> <li>▪ Calculation of volatility <ul style="list-style-type: none"> <li>○ Data set</li> <li>○ Weighting factors</li> <li>○ Seasonality</li> </ul> </li> <li>▪ Collateralisation &amp; margining <ul style="list-style-type: none"> <li>○ The impact of price volatility on deposits</li> <li>○ The impact on finance liquidity</li> <li>○ The impact on market liquidity</li> <li>○ Consequences &amp; solutions</li> </ul> </li> <li>▪ Supply contracts &amp; pricing <ul style="list-style-type: none"> <li>○ Volume flexibility contracts &amp; other flexibility</li> <li>○ Risk premium</li> </ul> </li> <li>▪ Limit structures</li> </ul> |

*CURRICULUM*

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|         | <ul style="list-style-type: none"> <li>○ Position limits</li> <li>○ Price limits (level &amp; volatility)</li> <li>○ Value at risk limits</li> <li>▪ Impact of volatility on the valuation and hedging of physical assets             <ul style="list-style-type: none"> <li>○ Processing capacity, storage capacity, transport capacity</li> <li>○ Cross-commodity spreads, time spreads, location spreads</li> <li>○ Spread options and their value</li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible  |
| Level   | Intermediate and advanced level  |

**“MANAGING TRADING-RELATED RISKS”***IN-HOUSE WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor's character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Trading</li> <li>➤ Risk management</li> </ul>  |
| Target audience                          | Finance specialists, asset managers, portfolio managers, traders, originators.  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ To get an idea of the risks relating to trading.</li> <li>▪ To know how these can be identified, assessed and controlled.</li> <li>▪ To understand the implications of mitigating those risks</li> <li>▪ Being able to point out the impact of one solution to another problem</li> </ul>   |
| Tutor/instructor                         | t.b.d.  |
| Materials provided                       | ✓ Handout (slides)  |
| Programme                                | <ul style="list-style-type: none"> <li>▪ Market risk <ul style="list-style-type: none"> <li>○ Adverse price moves</li> <li>○ Risk assessment <ul style="list-style-type: none"> <li>▪ Risk qualification</li> <li>▪ Risk quantification <ul style="list-style-type: none"> <li>• Value at risk <ul style="list-style-type: none"> <li>○ Methodologies</li> <li>○ Relevant parameters</li> <li>○ Interpretation of outcomes</li> </ul> </li> <li>• Stress testing</li> </ul> </li> </ul> </li> </ul> </li> </ul> <li>▪ Counterparty risk <ul style="list-style-type: none"> <li>○ The risk of non-delivery / non-supply – Delivery risk</li> <li>○ The risk of non-payment – Credit risk <ul style="list-style-type: none"> <li>▪ Clearing <ul style="list-style-type: none"> <li>• Clearing houses</li> <li>• Clearing members</li> </ul> </li> <li>▪ Collateralisation &amp; margining</li> <li>▪ Initial margin</li> <li>▪ Variation margin</li> <li>▪ Defaults &amp; the default waterfall</li> </ul> </li> </ul> </li> <li>▪ Liquidity risk <ul style="list-style-type: none"> <li>○ Market liquidity <ul style="list-style-type: none"> <li>▪ The consequences of a poor price formation for consumers</li> <li>▪ The relation between price volatility and asset liquidity</li> </ul> </li> </ul> </li> |

|         |   |
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|         | <ul style="list-style-type: none"> <li>▪ Market depth &amp; resilience</li> <li>○ Finance liquidity             <ul style="list-style-type: none"> <li>▪ Funding</li> <li>▪ The level of the working capital impacts the market activity</li> </ul> </li> <li>▪ The circle market risk - credit risk - liquidity risk             <ul style="list-style-type: none"> <li>○ Balancing the ratios</li> <li>○ Systemic risk</li> </ul> </li> <li>▪ Compliance risk             <ul style="list-style-type: none"> <li>○ Corporate culture</li> <li>○ Sanctioning may involve the company and/or employees                 <ul style="list-style-type: none"> <li>▪ Administrative sanctions</li> <li>▪ Criminal sanctions (incl. sentencing)</li> </ul> </li> <li>○ Naming &amp; shaming hurts the reputation of the company – Reputational risk</li> <li>○ Incorrect or incomplete reporting of data</li> <li>○ Incorrect or incomplete publication of inside information – Unlawful disclosure</li> <li>○ An non-effective trade surveillance function</li> </ul> </li> <li>▪ Governance             <ul style="list-style-type: none"> <li>○ Framework</li> <li>○ Setup                 <ul style="list-style-type: none"> <li>▪ Controls                     <ul style="list-style-type: none"> <li>• Pre-trade controls</li> <li>• Trade controls</li> <li>• Post-trade controls</li> </ul> </li> <li>▪ Limit structures                     <ul style="list-style-type: none"> <li>• Risk limits</li> <li>• P/L limits</li> <li>• Volume limits</li> <li>• Price limits</li> </ul> </li> </ul> </li> </ul> </li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Intermediate level  |

**“CARBON MARKETS & EMISSION RIGHTS TRADING” – VOLUNTARY & MANDATORY SYSTEMS**  
*IN-HOUSE WORKSHOP – In English language*

|  |   |
|--|---|
| Duration                                 | In total: 1 day<br>Timings: 10:00-16:00 (local time)  |
| Methodology                              | <ul style="list-style-type: none"> <li>▪ Online course: <ul style="list-style-type: none"> <li>○ Via MS Teams</li> </ul> </li> <li>▪ Course: <ul style="list-style-type: none"> <li>○ Hourly sessions (6#) (5-10 min. hourly break) + 60 min. lunch break</li> <li>○ Very interactive session due to exercises, simulations and case studies and even more so due to tutor's character</li> </ul> </li> <li>▪ Post-course: <ul style="list-style-type: none"> <li>○ Certification (upon passing) + reporting on results</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Trade</li> <li>➢ Energy transition</li> <li>➢ Compliance</li> </ul>  |
| Target audience                          | This course is suitable for any professional who wants to familiarise with the basics of carbon markets and the related aspects of relevance. Hence, the course is targeted particularly at those who are considered starters/juniors in this field of expertise.   |
| Skills development & Learning objectives | <p>Master/understand/being able to interpret/work with:</p> <ul style="list-style-type: none"> <li>▪ The basics of green energy</li> <li>▪ The fundamentals of emission rights</li> <li>▪ The foundation of carbon markets and emissions trading</li> <li>▪ Market mechanisms</li> <li>▪ Emission trading schemes &amp; the related allowances</li> <li>▪ Carbon credits</li> <li>▪ Attribute energy certificates being part of the energy transition</li> </ul>  |
| Tutor/instructor                         | t.b.d.  |
| Materials provided                       | ✓ Handout (slides)  |
| Programme                                | <p>Background: Climate change &amp; energy transition</p> <ul style="list-style-type: none"> <li>▪ Decrease energy consumption via (improved) energy efficiency</li> <li>▪ Renewability</li> <li>▪ Emission (rights) trading</li> </ul> <p>Emission rights vs. Carbon credits</p> <ul style="list-style-type: none"> <li>▪ National or regional Emission Trading Schemes (ETSs) <ul style="list-style-type: none"> <li>-European Union Emission trading scheme (EU ETS) including European Union Allowances (EUAs)</li> <li>- Other ETSs</li> </ul> </li> <li>▪ United Nations projects <ul style="list-style-type: none"> <li>- Clean Development Mechanism (CDM) – Certified Emiss. Rights (CERs)</li> <li>- Joint Implementaion (JI) – Emission Reduction Units (ERUs)</li> </ul> </li> <li>▪ Projects (Authorised &amp; Unauthorised)</li> </ul> <p>Attribute certificates</p> <ul style="list-style-type: none"> <li>▪ RECs, iRECs, Green certificates, Guarantee of origin</li> <li>▪ Institutions</li> <li>▪ High quality standards</li> </ul> <p>Frameworks &amp; standards</p> |

CURRICULUM

|         |   |
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|         | <ul style="list-style-type: none"> <li>▪ Gold standard</li> <li>▪ Verra</li> <li>▪ Other</li> </ul> <p style="margin-left: 40px;">Example: Certi-Q &amp; Vertogas</p> <p>Registers</p> <ul style="list-style-type: none"> <li>▪ National registry</li> <li>▪ Accounts</li> </ul> <p>Trading places</p> <ul style="list-style-type: none"> <li>▪ Bilateral deals (Master agreements, Credit support, including limits &amp; collateralisation, and Brokerage services)</li> <li>▪ Exchanges (Members &amp; memberships, Margining, Leverage)</li> </ul> <p>Market design</p> <ul style="list-style-type: none"> <li>▪ Continuous trading (Exchanges, Opening hours, Intraday price fluctuations)</li> <li>▪ Auctioning (Auction methodology, Blind auction, Volume allocation, Market clearing price setting)</li> </ul> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |



**OTHER LEARNING SERVICES**  
*CONTINUOUS PROFESSIONAL DEVELOPMENT*

**INTERVISION GROUP – “MARKETS & TRADING” – 52 MINI-COURSES**  
*WEEKLY HOURLY TRAINING SESSIONS – In English language*

|  |  |
|--|--|
| Duration                                 | On a weekly basis, a one-hour interactive session, of which the first 15 minutes concerns a lesson by the subject expert. Thereafter questions and cases will be handled.<br>Timings: Every Monday, 10:00-11:00 CET.   |
| Methodology                              | This service supports continuous professional development (CPD). Address the challenges you encounter at work every single week, or even ongoing, bringing you a real-time training-on-the-job. The moderator or expert constantly provides assistance, amongst others, by helping out with concepts, processes & terminology. This service concerns live mentoring, via online portal, as well as app, including members-only chatroom.<br>It concerns sessions for members-only, open to everyone with a so-called mentoring licence. Members can meet their peers and cross-learn. Chat during the week in the group, or consult the moderator or expert, while information, documentation & other materials are shared. In all cases, questions can be raised and will be answered. Alternatively, your daily practical cases will be handled (if desirable, anonymously). |
| Skills areas supported / Topics covered  | <ul style="list-style-type: none"> <li>➤ Markets</li> <li>➤ Products</li> <li>➤ Pricing</li> <li>➤ Trading</li> <li>➤ Risk</li> <li>➤ Hedging</li> <li>➤ Derivatives</li> <li>➤ Positions</li> <li>➤ Strategies</li> <li>➤ Flexibility</li> <li>➤ Contracting</li> <li>➤ Trade ops</li> </ul>  |
| Target audience                          | Suitable for all functions, including, but certainly not limited to, juniors and new recruits.   |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Market structures and market working</li> <li>▪ Metals, softs, fossil fuels, electricity &amp; supply contracts</li> <li>▪ Price drivers, price formation and price-indexation</li> <li>▪ Commodities &amp; energy; physical &amp; financial trading</li> <li>▪ Risk management of positions &amp; portfolios</li> <li>▪ Hedging strategies and hedging tools</li> <li>▪ Futures, options &amp; swaps</li> <li>▪ Asset management and portfolio optimisation</li> <li>▪ Asset-backed trading and proprietary trading</li> <li>▪ Outright, embedded &amp; real options</li> <li>▪ Master agreements, supply contracts</li> <li>▪ Clearing, settlement, collateralisation, margining</li> </ul>  |
| Tutor/instructor                         | Various  |
| Materials provided                       | N/a  |

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| Programme | <p><b>2024 Topics</b></p> <p>See here:<br/> <a href="https://www.entrima.org/docs/Entrima_Intervision_Markets&amp;Trading_Season-2024.pdf">https://www.entrima.org/docs/Entrima_Intervision_Markets&amp;Trading_Season-2024.pdf</a></p> <p>1 Jan: – (no session)<br/> 8 Jan: Price formation - order book<br/> 15 Jan: Derivatives<br/> 22 Jan: Supply contracts<br/> 29 Jan: Funding liquidity - capital<br/> 5 Feb: Hedging &amp; market liquidity<br/> 12 Feb: – (no session)<br/> 19 Feb: – (no session)<br/> 26 Feb: Price-indexation<br/> 4 Mar: Risk management<br/> 11 Mar: Weather risk<br/> 18 Mar: Forward - spot - balancing<br/> 25 Mar: The role of speculators<br/> 1 Apr: Crude oil &amp; refinery products<br/> 8 Apr: Bilateral deals &amp; OTC markets<br/> 15 Apr: Exchange-trading<br/> 22 Apr: Natural gas &amp; LNG<br/> 29 Apr: Counterparty (credit) risk<br/> 6 May: Brokerage services<br/> 13 May: Industry bodies &amp; their role<br/> 20 May: Master agreements<br/> 27 May: – (no session)<br/> 3 Jun: Agro markets &amp; bio-energy<br/> 10 Jun: Storage capacity<br/> 17 Jun: Fundamental price drivers<br/> 24 Jun: Transport capacity &amp; freight<br/> 1 Jul: Price volatility<br/> 8 Jul: Price correlation<br/> 15 Jul: Coal markets &amp; trading<br/> 22 Jul: Options<br/> 29 Jul: Electricity value chain<br/> 5 Aug: Asset management<br/> 12 Aug: Flexibility (in contracts)<br/> 19 Aug: Flexibility (in phys. assets)<br/> 26 Aug: Portfolio management<br/> 2 Sep: Spreads &amp; spread trading<br/> 9 Sep: Front, mid &amp; back office<br/> 16 Sep: Settlement<br/> 23 Sep: Carbon markets<br/> 30 Sep: Clearing<br/> 7 Oct: Price reporting agencies<br/> 14 Oct: Clean energy policy<br/> 21 Oct: Transactional data<br/> 28 Oct: Cash settlement<br/> 4 Nov: Position limits<br/> 11 Nov: Value at risk<br/> 18 Nov: Deal confirmation<br/> 25 Nov: Sustainability<br/> 2 Dec: Reserves &amp; production<br/> 9 Dec: Renewables</p> |
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*CURRICULUM*

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|         | 16 Dec: The substitution-effect<br>23 Dec: - (no session) |
| Options | N/a   |
| Level   | Fundamentals & essentials                                 |

More information: <https://www.entrima.org/product/intervision-markets-trading/>

**INTERVISION GROUP – “TRADE COMPLIANCE & SURVEILLANCE” – 52 MINI-COURSES**  
*WEEKLY HOURLY TRAINING SESSIONS – In English language*

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| Duration                                 | On a weekly basis, a one-hour interactive session, of which the first 15 minutes concerns a lesson by the subject expert. Thereafter questions and cases will be handled.<br>Timings: Every Monday, 10:00-11:00 CET.  |
| Methodology                              | This service supports continuous professional development (CPD). Address the challenges you encounter at work every single week, or even ongoing, bringing you a real-time training-on-the-job. The moderator or expert constantly provides assistance, amongst others, by helping out with concepts, processes & terminology.<br>This service concerns live mentoring, via online portal, as well as app, including members-only chatroom.<br>It concerns sessions for members-only, open to everyone with a so-called mentoring licence. Members can meet their peers and cross-learn. Chat during the week in the group, or consult the moderator or expert, while information, documentation & other materials are shared. In all cases, questions can be raised and will be answered. Alternatively, your daily practical cases will be handled (if desirable, anonymously).       |
| Skills areas supported / Topics covered  | <ul style="list-style-type: none"> <li>➤ Market abuse regulations</li> <li>➤ Inside information</li> <li>➤ Insider trading</li> <li>➤ Market manipulation</li> <li>➤ Manipulative schemes</li> <li>➤ Trade compliance</li> <li>➤ Trade surveillance</li> <li>➤ Behaviour &amp; conduct</li> <li>➤ Corporate culture</li> </ul>  |
| Target audience                          | Suitable for all functions, including, but certainly not limited to, juniors and new recruits.  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Inside information: Qualification, publication, corporate actions</li> <li>▪ Inside trading: Front running</li> <li>▪ Market manipulation: Schemes, interpretation, context</li> <li>▪ Price formation: Order book, liquidity, volatility, settlement prices</li> <li>▪ Algorithmic trading: Governance, testing, manipulative schemes</li> <li>▪ Authorities: Tasks, communication, relationship</li> <li>▪ Data reporting: Data quality, formats/templates</li> <li>▪ Product specifics: Futures, options &amp; swaps</li> <li>▪ Trade surveillance: Systems, calibration, alert management</li> <li>▪ Case handling: Strategy, logging</li> <li>▪ Compliance: Effectiveness, corporate culture</li> <li>▪ Sanctions: Jurisprudence, administrative &amp; criminal sanctions</li> </ul> |
| Tutor/instructor                         | Various   |

## CURRICULUM

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| Materials provided | N/a  |
| Programme          | <p><b>2024 Topics</b></p> <p>See here:<br/> <a href="https://www.entrima.org/docs/Entrima_Intervision_TradeCompliance&amp;Surveillance_Season-2024.pdf">https://www.entrima.org/docs/Entrima_Intervision_TradeCompliance&amp;Surveillance_Season-2024.pdf</a></p> <p>1 Jan: – (no session)<br/> 8 Jan: Publication of inside info<br/> 15 Jan: EU regulation – REMIT<br/> 22 Jan: EU regulation – MAR<br/> 29 Feb: Sanctioning<br/> 5 Feb: Spoofing<br/> 12 Feb: Marking<br/> 19 Feb: Data reporting<br/> 26 Feb: US regulations – CEA &amp; DFA<br/> 4 Mar: Front running<br/> 11 Mar: Case handling<br/> 18 Mar: Whistleblowing<br/> 25 Mar: Inside Information<br/> 1 Apr: – (no session)<br/> 8 Apr: Criteria of inside information<br/> 15 Apr: Circular trading<br/> 22 Apr: Algorithmic trading<br/> 29 Apr: Cross-market manipulation<br/> 6 May: Effective compliance regimes<br/> 13 May: Market abuse with swaps<br/> 20 May: – (no session)<br/> 27 May: Money passes &amp; compensation<br/> 3 Jun: Roles of brokers &amp; exchanges<br/> 10 Jun: Pre-arranged trading<br/> 17 Jun: Dissemination of false info<br/> 24 Jun: Effective trade surveillance<br/> 1 Jul: Market manipulation<br/> 8 Jul: Layering<br/> 15 Jul: Suspicious activity<br/> 22 Jul: Market abuse with options<br/> 29 Jul: Spot vs. forward markets<br/> 5 Aug: Inside info – Gas<br/> 12 Aug: Withholding capacity<br/> 19 Aug: Pump &amp; dump<br/> 26 Aug: Cross-trades<br/> 2 Sep: Disseminate misleading info<br/> 9 Sep: Inside info – Electricity<br/> 16 Sep: Quote stuffing<br/> 23 Sep: Momentum ignition<br/> 30 Sep: Wash trades<br/> 7 Oct: US regulations – EPA &amp; EISA<br/> 14 Oct: Brokers and abuse<br/> 21 Oct: System operators and abuse<br/> 28 Oct: Financial crime<br/> 4 Nov: Non-genuine orders<br/> 11 Nov: Parking<br/> 18 Nov: Ethical blindness &amp; culture<br/> 25 Nov: Managing complexity</p> |

*CURRICULUM*

|         |   |
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|         | 2 Dec: Fair & orderly trading<br>9 Dec: Benchmark trading<br>16 Dec: Indicators of manipulation |
| Options | N/a   |
| Level   | Fundamentals & essentials   |

More information: <https://www.entrima.org/product/intervision-trade-compliance-surveillance/>

**LEARNING PLATFORM – “MARKETS & TRADING” – 100+ COURSES**

*OPEN ENROLMENT – UNLIMITED ACCESS TO ALL LISTED COURSES – In English language*

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| Duration                                 | Learn whatever you want, in your own time, at your own pace.<br>A licence to learn provides a learner 24/7 access during 365 days to all listed courses and exams on ENTRIMA's Learning Platform “Markets & Trading”.<br>Timings: Start can be at any day, as instructed by learner (or employer).   |
| Methodology                              | All courses consist of a bundle of video lessons and an exam. <ul style="list-style-type: none"> <li>▪ Video lessons: <ul style="list-style-type: none"> <li>○ Animation-style / cartoon</li> </ul> </li> <li>▪ Exams: <ul style="list-style-type: none"> <li>○ Each course ends with an exam</li> <li>○ Multiple choice questions</li> </ul> </li> <li>▪ Certification: <ul style="list-style-type: none"> <li>○ Upon passing the relevant exam the candidate is certified instantly</li> </ul> </li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Analysis</li> <li>➤ Trading</li> <li>➤ Product knowledge</li> <li>➤ Pricing</li> <li>➤ Risk management</li> <li>➤ Trade operations</li> <li>➤ Finance</li> </ul>  |
| Target audience                          | All functions  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Markets</li> <li>▪ Products</li> <li>▪ Pricing</li> <li>▪ Trading</li> <li>▪ Risk</li> <li>▪ Hedging</li> <li>▪ Derivatives</li> <li>▪ Trading operations</li> <li>▪ Trading strategies</li> <li>▪ Flexibility</li> </ul>  |
| Tutor/instructor                         | N/a  |
| Materials provided                       | Downloadable materials in the learning environment, including glossary and Excel files (risk calculation model, option valuation model, futures & option pay-off structures)   |
| Curriculum                               | <p><b>COURSE STYLE: ANIMATION-STYLE VIDEOS – ENGLISH VOICE &amp; SUBTITLES</b></p> <p><b>Markets</b></p> <ol style="list-style-type: none"> <li>1. Commodity markets</li> <li>2. Markets &amp; market participants</li> <li>3. Gas markets – <i>US versus Europe</i></li> <li>4. Electricity markets – <i>US versus Europe</i></li> </ol> <p><b>Products</b></p> <ol style="list-style-type: none"> <li>5. Commodities</li> </ol>  |



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|  | <ul style="list-style-type: none"> <li>6. Metals</li> <li>7. Agricultural commodities</li> <li>8. LNG</li> </ul> <p><b>Transport</b></p> <ul style="list-style-type: none"> <li>9. Freight – Cargos, vessels, routes &amp; operations</li> <li>10. Freight – Incoterms</li> <li>11. Freight – Freight rates &amp; indices</li> <li>12. Freight – FFAs &amp; freight derivatives</li> </ul> <p><b>Climate &amp; sustainability</b></p> <ul style="list-style-type: none"> <li>13. Weather risk</li> <li>14. Weather data</li> <li>15. Weather derivatives</li> <li>16. Pricing of weather derivatives</li> <li>17. Climate change &amp; energy policy</li> <li>18. Carbon markets &amp; emission rights trading</li> <li>19. Carbon trading – <i>EU-ETS</i></li> <li>20. Attribute certificates</li> <li>21. Bio-energy</li> <li>22. Heat</li> <li>23. Hydrogen</li> </ul> <p><b>Derivatives</b></p> <ul style="list-style-type: none"> <li>24. Derivatives – Introduction</li> <li>25. Derivatives – Position management</li> <li>26. Options – Introduction</li> <li>27. Options – Exercise, assignment &amp; settlement</li> <li>28. Options – Hedging exposures</li> <li>29. Options – Put-call parity &amp; synthetics</li> <li>30. Options – Greek variables</li> <li>31. Options – Exotics</li> <li>32. Options – Valuation models</li> <li>33. Options – Real options</li> <li>34. Swaps – Interest rate swaps</li> <li>35. Swaps – FX swaps</li> <li>36. Swaps – Commodity swaps</li> <li>37. Swaps – Swaptions &amp; CDSs</li> </ul> <p><b>Pricing</b></p> <ul style="list-style-type: none"> <li>38. Commodity pricing</li> <li>39. Market analysis</li> <li>40. Commodity indices &amp; price-indexation</li> <li>41. Price volatility</li> <li>42. Liquidity</li> <li>43. Forward curves</li> <li>44. Price correlation</li> </ul> <p><b>Contracting</b></p> <ul style="list-style-type: none"> <li>45. PPAs – <i>Introduction</i></li> <li>46. Master agreements</li> </ul> <p><b>Trading</b></p> <ul style="list-style-type: none"> <li>47. Reasons to transact</li> <li>48. Bilateral deals &amp; OTC trading – <i>Introduction</i></li> <li>49. Brokers &amp; brokerage services</li> </ul> |
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|  | <p>50. OTC trading platforms</p> <p>51. Exchange trading</p> <p>52. Central order book</p> <p>53. Order types</p> <p>54. Hedging strategies with futures</p> <p>55. Hedging strategies with swaps</p> <p>56. Hedging strategies with options</p> <p>57. Metals – <i>Trading, derivatives &amp; hedging</i></p> <p>58. Agricultural commodities – <i>Trading, derivatives &amp; hedging</i></p> <p>59. Spreads &amp; spread trading</p> <p>60. Algorithmic trading</p> <p>61. Types of traders</p> <p>62. Fee structures</p> <p>63. The trading desk – <i>Trading tools &amp; technicalities</i></p> <p><b>Risk &amp; opportunity</b></p> <p>64. Risk &amp; opportunity</p> <p>65. The risk management organisation</p> <p>66. Trading &amp; risk management systems</p> <p>67. Value at Risk</p> <p>68. Exposures &amp; financial performance</p> <p>69. Hedging strategies for commodity producers</p> <p>70. Hedging strategies for commodity consumers</p> <p>71. Flexibility</p> <p>72. Modelling</p> <p><b>Trading operations</b></p> <p>73. Clearing</p> <p>74. Netting</p> <p>75. Margining</p> <p>76. Settlement</p> <p>77. Finance – <i>Accounting</i></p> <p><b>COURSE STYLE: TUTORED VIDEO LESSONS (DEEP DIVES) – SLIDES, ENGLISH AUDIO, NO SUBTITLES</b></p> <p><b>Fundamentals</b></p> <p>78. Fundamentals of Commodity Markets</p> <p>79. Fundamentals of Energy Trading</p> <p><b>Fossil fuels &amp; electricity</b> (<i>markets, products, pricing &amp; trading</i>)</p> <p>80. Oil (<i>Basic</i>)</p> <p>81. Oil (<i>Intermediate</i>)</p> <p>82. Oil (<i>Advanced</i>)</p> <p>83. Oil (<i>Expert</i>)</p> <p>84. Gas (<i>Basic</i>)</p> <p>85. Gas (<i>Intermediate</i>)</p> <p>86. Gas (<i>Advanced</i>)</p> <p>87. Gas (<i>Expert</i>)</p> <p>88. Coal &amp; Freight (<i>Basic</i>)</p> <p>89. Electricity (<i>Basic</i>)</p> <p>90. Electricity (<i>Intermediate</i>)</p> <p>91. Electricity (<i>Advanced</i>)</p> <p>92. Electricity (<i>Expert</i>)</p> <p><b>Risk</b></p> |
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CURRICULUM

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|         | <p>93. Risk management (<i>Basic</i>)<br/>           94. Risk management (<i>Intermediate</i>)<br/>           95. Risk management (<i>Advanced</i>)<br/>           96. Risk management (<i>Expert</i>)</p> <p><b>Trading operations – Deep dive</b></p> <p>97. Back office &amp; Finance (<i>Basic</i>)<br/>           98. Back office &amp; Finance (<i>Intermediate</i>)<br/>           99. Back office &amp; Finance (<i>Advanced</i>)<br/>           100. Back office &amp; Finance (<i>Expert</i>)</p> <p><b>Contracting – Deep dive</b></p> <p>101. Procurement &amp; sales (<i>Basic</i>)<br/>           102. Procurement &amp; sales (<i>Intermediate</i>)<br/>           103. Procurement &amp; sales (<i>Advanced</i>)<br/>           104. Procurement &amp; sales (<i>Expert</i>)<br/>           105. Contract management – Master Agreements</p> <p><b>Derivatives – Deep dive</b></p> <p>106. Forwards &amp; futures (<i>Basic</i>)<br/>           107. Forwards &amp; futures (<i>Intermediate</i>)<br/>           108. Forwards &amp; futures (<i>Advanced</i>)<br/>           109. Forwards &amp; futures (<i>Expert</i>)<br/>           110. Swaps (<i>Basic</i>)<br/>           111. Swaps (<i>Intermediate</i>)<br/>           112. Swaps (<i>Advanced</i>)<br/>           113. Swaps (<i>Expert</i>)<br/>           114. Options (<i>Basic</i>)<br/>           115. Options (<i>Intermediate</i>)<br/>           116. Options (<i>Advanced</i>)<br/>           117. Options (<i>Expert</i>)</p> |
| Options | White-labelling as in-house academy is possible   |
| Level   | Courses at various levels   |

See also: <https://www.entrima.org/courses/>

**LEARNING PLATFORM – “TRADE COMPLIANCE & SURVEILLANCE” – 100+ COURSES**  
*OPEN ENROLMENT – UNLIMITED ACCESS TO ALL LISTED COURSES – In English language*

|  |   |
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| Duration                                 | Learn whatever you want, in your own time, at your own pace.<br>A licence to learn provides a learner 24/7 access during 365 days to all listed courses and exams on ENTRIMA’s Learning Platform “Trade Compliance & Surveillance”.<br>Timings: Start can be at any day, as instructed by learner (or employer).  |
| Methodology                              | All courses consist of a bundle of video lessons and an exam. <ul style="list-style-type: none"> <li>▪ Video lessons: <ul style="list-style-type: none"> <li>○ Animation-style / cartoons</li> </ul> </li> <li>▪ Exams: <ul style="list-style-type: none"> <li>○ Each course ends with an exam</li> <li>○ Multiple choice questions</li> </ul> </li> <li>▪ Certification: <ul style="list-style-type: none"> <li>○ Upon passing the relevant exam the candidate is certified instantly</li> </ul> </li> </ul>   |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Market abuse regulations</li> <li>➢ Inside information</li> <li>➢ Insider trading</li> <li>➢ Market manipulation</li> <li>➢ Manipulative schemes</li> <li>➢ Trade compliance</li> <li>➢ Trade surveillance</li> <li>➢ Behaviour &amp; conduct</li> <li>➢ Corporate culture</li> </ul>  |
| Target audience                          | All functions   |
| Skills development & Learning objectives | <ul style="list-style-type: none"> <li>▪ Being able to assess whether/when information qualifies as inside information</li> <li>▪ Being able to identify market abuse</li> <li>▪ Understand criteria of relevance to qualify practical cases</li> <li>▪ Being able to differentiate between manipulative schemes</li> <li>▪ Master market abuse prevention</li> <li>▪ Master market abuse detection</li> </ul>  |
| Tutor/instructor                         | N/a   |
| Materials provided                       | Downloadable materials in the learning environment, including glossary and Excel files (risk calculation model, option valuation model, futures & option pay-off structures)  |
| Curriculum                               | <p><b>COURSES – INCLUDING EXAMINATION &amp; CERTIFICATION</b></p> <p><b>Misconduct at Work</b></p> <ol style="list-style-type: none"> <li>1. Concepts – Conduct versus Misconduct</li> <li>2. Concepts – Morality, ethics &amp; integrity</li> <li>3. Ethics in the workplace – Discrimination</li> <li>4. Ethics in the workplace – Harassment</li> <li>5. Ethics in the workplace – Sexual intimidation</li> <li>6. Governance – Conflicts of interests &amp; moral dilemmas</li> <li>7. Governance – Rules &amp; codes</li> <li>8. Governance – KYC</li> </ol> |

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|  | <p>9. Governance – Whistleblowing policy<br/> 10. Governance – Anti-retaliation policy<br/> 11. Culture – Corporate climate<br/> 12. Culture – Remuneration</p> <p><b>Senior Managers and Certification Regime</b></p> <p>1. Background &amp; Scope<br/> 2. Conduct Rules<br/> 3. Certification Regime<br/> 4. Senior Managers Regime</p> <p><b>Data protection</b></p> <p>1. Data protection &amp; privacy</p> <p><b>Financial crime</b></p> <p>1. Introduction to financial crime<br/> 2. Money laundering<br/> 3. Terrorist financing<br/> 4. Bribery<br/> 5. Financial fraud<br/> 6. Tax fraud<br/> 7. Employee fraud<br/> 8. Market abuse</p> <p><b>Market Abuse (General)</b></p> <p>1. General introduction to market abuse</p> <p><b>Market Abuse (Singapore)</b></p> <p>1. Securities &amp; Futures Act<br/> 2. Commodity Trading Act</p> <p><b>Market Abuse (US regulations)</b></p> <p>1. US market abuse regulations &amp; authorities<br/> 2. CEA &amp; DFA – <i>(Dodd-Frank-amended) Commodity Exchange Act</i><br/> 3. EPA - <i>Energy Policy Act</i><br/> 4. EISA - <i>Energy Independence and Security Act</i></p> <p><b>Market Abuse (EU regulations)</b></p> <p>1. EU market abuse regulations &amp; institutions<br/> 2. REMIT – <i>Regulation on Wholesale Energy Market Integrity &amp; Transparency</i><br/> 3. MAR – <i>Market Abuse Regulation</i><br/> 4. Ethics &amp; integrity<br/> 5. Commodity value chain<br/> 6. Inside information<br/> 7. Inside information – Under REMIT<br/> 8. Inside information – Under MAR<br/> 9. Insider trading &amp; market manipulation<br/> 10. Markets &amp; trading<br/> 11. Products<br/> 12. Pricing</p> <p><b>Inside information</b></p> <p>1. Inside information – Capital markets<br/> 2. Inside information – Electricity production capacity</p> |
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|  | <p>3. Inside information – Electricity transmission capacity</p> <p><b>Market manipulation</b></p> <ol style="list-style-type: none"> <li>1. Market manipulation – Abusive schemes</li> <li>2. Market manipulation – Wash trades</li> <li>3. Market manipulation – Spoofing &amp; layering</li> <li>4. Market manipulation – Physical withholding</li> <li>5. Market manipulation – Cross-market manipulation</li> <li>6. Market manipulation – Pump &amp; Dump</li> <li>7. Market manipulation – Marking the close</li> <li>8. Market manipulation – Dissemination of false or misleading information</li> <li>9. Market manipulation – Pre-arranged trading &amp; cross-trades</li> <li>10. Market manipulation – Circular trading</li> <li>11. Market manipulation – Parking</li> <li>12. Market manipulation – Compensation trades &amp; money passes</li> <li>13. Market manipulation – Market cornering &amp; abusive squeezes</li> <li>14. Market manipulation – Brokerage services</li> <li>15. Market manipulation – Fair &amp; orderly trading</li> <li>16. Market manipulation – Oil markets</li> <li>17. Market manipulation – Metal markets</li> <li>18. Market manipulation – Agricultural commodity markets</li> </ol> <p><b>Regulation</b></p> <ol style="list-style-type: none"> <li>1. Definitions – MAR</li> <li>2. Definitions – MiFID II</li> <li>3. Definitions – REMIT</li> </ol> <p><b>Compliance</b></p> <ol style="list-style-type: none"> <li>1. Trade compliance – The basics</li> <li>2. Trade compliance – Algorithmic trading compliance</li> </ol> <p><b>Surveillance</b></p> <ol style="list-style-type: none"> <li>1. Surveillance – Financial crime – A holistic approach</li> <li>2. Trade surveillance – The basics</li> <li>3. Trade surveillance – Systems</li> <li>4. Trade surveillance – Option markets</li> <li>5. Trade surveillance – Indicators of manipulative behaviour</li> </ol> <p><b>Conduct</b></p> <ol style="list-style-type: none"> <li>1. Morality</li> <li>2. Decision-making &amp; behaviour</li> <li>3. Ethical blindness</li> <li>4. Conduct management</li> <li>5. Psychology</li> <li>6. Leadership features &amp; performance rules</li> </ol> <p><b>CASE STUDIES – AWARENESS SESSIONS &amp; DILEMMA DISCUSSION</b><br/> <i>Open questions, automated responses &amp; checks by compliance function</i></p> <p><b>Practical cases</b><br/> General information about practical cases</p> <ol style="list-style-type: none"> <li>1. Inside information – Capital markets</li> <li>2. Inside information – Electricity markets</li> <li>3. Inside information – Gas markets</li> </ol> |
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|         | <ol style="list-style-type: none"> <li>4. Insider trading</li> <li>5. Behaviour – Information-related activity</li> <li>6. Behaviour – Trading patterns</li> <li>7. Behaviour – Order-related activity – Various</li> <li>8. Behaviour – Order-related activity – Extreme prices</li> <li>9. Behaviour – Deal-related activity – Various</li> <li>10. Behaviour – Deal-related activity – Off-market deals</li> <li>11. Behaviour – Technology-related activity</li> <li>12. Behaviour – Capacity-related activity</li> <li>13. Behaviour – Cross-trades</li> <li>14. Behaviour – Power-markets – Cross-border cross-trades</li> <li>15. Behaviour – Power-markets – Day-ahead auctions</li> <li>16. Behaviour – Power-markets – Intraday &amp; balancing</li> <li>17. Behaviour – Broker involvement</li> </ol> <p><b>Materials</b></p> <ol style="list-style-type: none"> <li>1. Regulations</li> <li>2. Guidance</li> <li>3. Rulebooks</li> <li>4. Sanctions imposed by authorities</li> <li>5. Disciplinary notices</li> </ol> |
| Options | White-labelling as in-house academy is possible  |
| Level   | Courses at various levels  |

See also: <https://www.entrima.org/trade-compliance-surveillance-courses/>

**COMPETENCE TRAINER – TRADING SIMULATION PLATFORM**

*OPEN ENROLMENT – UNLIMITED ACCESS TO ALL LISTED SIMULATIONS – In English language*

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| Duration                                 | Learn & apply whatever you want, in your own time, at your own pace.<br>A licence to simulate provides a learner 24/7 access during 12 months to all listed simulations ENTRIMA's Trading Simulation Platform.<br>Timings: Start can be at any day, as instructed by learner (or employer)  |
| Methodology                              | The simulations cover OTC trading and exchange-trading of oil, gas, coal, electricity, carbon dioxide emission rights, and futures and options thereon. <ul style="list-style-type: none"> <li>▪ Simulations: <ul style="list-style-type: none"> <li>○ Practical application allows for embedding knowledge and competence development</li> </ul> </li> <li>▪ Tutorial: <ul style="list-style-type: none"> <li>○ The simulations provide for tutorials and instructions.</li> </ul> </li> <li>▪ Report: <ul style="list-style-type: none"> <li>○ At the end of any simulation a report is provided</li> </ul> </li> <li>▪ Certification: <ul style="list-style-type: none"> <li>○ At the end of any simulation a proof of participation is provided</li> </ul> </li> </ul>  |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➤ Analysis</li> <li>➤ Trading</li> <li>➤ Product knowledge</li> <li>➤ Pricing</li> <li>➤ Risk assessment &amp; risk quantification</li> <li>➤ Trade operations</li> <li>➤ Finance</li> </ul>   |
| Target audience                          | All functions (non-traders & traders)   |
| Skills development & Learning objectives | <ul style="list-style-type: none"> <li>▪ <b>Master basic processes &amp; concepts</b> - Including related terminology &amp; related aspects <ul style="list-style-type: none"> <li>○ The trading environment</li> <li>○ The trade process &amp; the contract lifecycle</li> <li>○ Straight through processing (of orders and deals)</li> <li>○ The decision-making process, psychology of markets and handling emotions</li> </ul> </li> <li>▪ <b>Become an expert in trading</b> <ul style="list-style-type: none"> <li>○ Transacting or deal-making (buying &amp; selling)</li> <li>○ Open a position &amp; close a position</li> <li>○ Order types, plus order submission, processing and matching</li> <li>○ Hitting &amp; lifting</li> <li>○ Market making &amp; market taking (the role of initiator versus aggressor)</li> </ul> </li> <li>▪ <b>Learn about position management</b> <ul style="list-style-type: none"> <li>○ Long/short (master short selling)</li> <li>○ Netting (multilateral)</li> </ul> </li> <li>▪ <b>Conquer types of product</b> <ul style="list-style-type: none"> <li>○ Forwards, futures &amp; options</li> <li>○ Spreads (cross-commodity spreads, time spreads, location spreads)</li> </ul> </li> <li>▪ <b>Assure your expertise in pricing</b> <ul style="list-style-type: none"> <li>○ Price formation, order book and bid &amp; ask</li> <li>○ Market liquidity</li> </ul> </li> </ul> |



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|  | <ul style="list-style-type: none"> <li>○ Price volatility</li> <li>▪ <b>To familiarise with the look &amp; feel of screen-based trading.</b> <ul style="list-style-type: none"> <li>○ What is shown on a screen? And which details matter most?</li> <li>○ Analyse what bid or ask stands for</li> </ul> </li> <li>▪ <b>Master the working of an order book</b> <ul style="list-style-type: none"> <li>○ To analyse the bid-ask spread</li> <li>○ To observe market depth</li> </ul> </li> <li>▪ <b>Master OTC trading &amp; the usances in bilateral deal-making, including:</b> <ul style="list-style-type: none"> <li>○ Master agreement, credit risk management (limits) &amp; the role of inter-dealer brokers</li> </ul> </li> <li>▪ <b>Overcome exchange-trading</b> <ul style="list-style-type: none"> <li>○ Clearing</li> <li>○ (Cross-)margin</li> </ul> </li> <li>▪ <b>Learn about risk management</b> <ul style="list-style-type: none"> <li>○ Value at risk (VaR)</li> <li>○ Price correlation</li> <li>○ Greek variables (Delta, Gamma, Vega, Theta, Rho)</li> </ul> </li> <li>▪ <b>Perform market analysis</b> <ul style="list-style-type: none"> <li>○ Processing data &amp;, news as well as price forecasting</li> <li>○ Fundamental analysis, technical analysis, quantitative analysis, psychological analysis</li> </ul> </li> <li>▪ <b>Price chart analysis</b> <ul style="list-style-type: none"> <li>○ Dynamic graphical representation of the price development</li> <li>○ Charting: Support &amp; resistance lines, as well as confirmation &amp; reverse patterns</li> </ul> </li> <li>▪ <b>Forward curve analysis</b> <ul style="list-style-type: none"> <li>○ Static graphical representation of prices of contracts with a different time-to-maturity</li> <li>○ Contango &amp; Backwardation</li> <li>○ Cost of carry</li> </ul> </li> <li>▪ <b>Master FX trading</b> <ul style="list-style-type: none"> <li>○ Exchange one currency position for another currency position, as you like</li> <li>○ Monitor FX rate developments and the impact of it for deal-making</li> <li>○ Provide price quotations &amp; learn about FX exchange rates</li> <li>○ Experience inter-bank transactions</li> </ul> </li> <li>▪ <b>Become an expert in timing</b> <ul style="list-style-type: none"> <li>○ For any market participant, timing is essential; it will impact the financial performance.</li> </ul> </li> <li>▪ <b>Learn how to optimise the financial performance</b> <ul style="list-style-type: none"> <li>○ Experience future cash flows are margins can be assured</li> </ul> </li> <li>▪ <b>Interpret result - Understand the financial statement</b> <ul style="list-style-type: none"> <li>○ Take into account relevant aspects in order to qualify or to quantify the performance: <ul style="list-style-type: none"> <li>➢ Direct transaction costs (fees), as well as indirect transaction costs (slippage)</li> <li>➢ Profit &amp; loss (P/L), realised (<i>after liquidation</i>) &amp; unrealised (<i>open positions; M-to-M</i>)</li> </ul> </li> <li>○ The process of (cash) collateralisation <ul style="list-style-type: none"> <li>➢ Deposits (<i>initial margin + variation margin</i>)</li> </ul> </li> <li>○ Cash management <ul style="list-style-type: none"> <li>➢ Finance liquidity &amp; working capital</li> </ul> </li> <li>○ Identify transaction cost <ul style="list-style-type: none"> <li>➢ Exchange fee &amp; clearing fee</li> </ul> </li> </ul> </li> </ul> |
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## CURRICULUM

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|                    | <ul style="list-style-type: none"> <li>▪ <b>Learn about trading psychology</b> (mental management) <ul style="list-style-type: none"> <li>○ Experience the gaming effect - Experience stress &amp; adrenaline due to market dynamics</li> <li>○ Experience a profit, but also a loss; hence, an a-symmetric mental experience</li> <li>○ Experience the market going against your position</li> <li>○ Perform multi-tasking</li> </ul> </li> </ul> |
| Tutor/instructor   | N/a  |
| Materials provided | None   |
| Simulations        | 50 trading simulations   |
| Options            | N/a  |
| Level              | Simulations can be run at different speed levels   |

See also: <https://www.entrima.org/online-trading-simulations/>

**“SCHOOL OF ENERGY TRADING”**

*SUPER COMPREHENSIVE LEARNING JOURNEY – In English language*

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| Duration                                 | In total:<br>- 1-year programme<br>Timings:<br>- Spring cohort starting on 1 <sup>st</sup> Tuesday of February<br>- Autumn cohort starting on 1 <sup>st</sup> Tuesday of September  |
| Methodology                              | A learner is provided with the following learning services: <ul style="list-style-type: none"> <li>▪ Self-study: <ul style="list-style-type: none"> <li>➢ 365 days access to Learning Platform – “Markets &amp; Trading”</li> <li>➢ 365 days access to Learning Platform – “Trade Compliance &amp; Surveill.”</li> <li>➢ 365 days access to Competence Trainer (Simulation Platform)</li> </ul> </li> <li>▪ Mentoring services: <ul style="list-style-type: none"> <li>➢ 365 days membership of Intervision Group – “Markets &amp; Trading”</li> <li>➢ 365 days membership of Intervision Group – “Trade Compliance &amp; Sur.”</li> </ul> </li> <li>▪ Live-tutoring:</li> <li>▪ 13 workshops (online &amp; on-site)</li> <li>▪ Study materials:</li> <li>▪ A series of handbooks (hardcopy)</li> <li>▪ Other materials (accessible via Learning Platform)</li> </ul> |
| Skills areas supported                   | <ul style="list-style-type: none"> <li>➢ Analysis</li> <li>➢ Trading</li> <li>➢ Product knowledge</li> <li>➢ Pricing</li> <li>➢ Risk management</li> <li>➢ Trade operations</li> <li>➢ Finance</li> </ul>   |
| Target audience                          | New recruits (or juniors) in the front, middle and back office  |
| Skills development & Learning objectives | Master/understand/being able to interpret/work with: <ul style="list-style-type: none"> <li>▪ Markets</li> <li>▪ Products</li> <li>▪ Pricing</li> <li>▪ Trading</li> <li>▪ Risk</li> <li>▪ Hedging</li> <li>▪ Derivatives</li> <li>▪ Trading operations</li> <li>▪ Trading strategies</li> <li>▪ Flexibility</li> </ul>   |
| Tutor/instructor                         | Various (Course director: t.b.d.)   |
| Materials provided                       | <ul style="list-style-type: none"> <li>✓ Book “Commodity &amp; Energy Markets”</li> <li>✓ Book “Commodity &amp; Energy Trading”</li> </ul>  |
| Programme                                | <p><u>Launch</u><br/><b>KICK-OFF</b><br/>An online introduction of 30 minutes</p> <ul style="list-style-type: none"> <li>▪ Introduction to the programme – Explaining the setup, as well as the rights &amp; responsibilities.</li> </ul> <p><u>Week 1</u><br/><b>EENRGY VALUE CHAINS</b></p>   |

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|  | <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Power, crude &amp; distillates, natural gas &amp; LNG, bio-energy, hydrogen, heat, emission rights &amp; attribute certificates.</li> <li>▪ Supply chains – Upstream, midstream and downstream activities and capacity.</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Commodities</li> <li>• Climate change &amp; energy policy</li> <li>• Bio-energy</li> <li>• Heat</li> <li>• Hydrogen</li> <li>• LNG</li> <li>• Carbon markets &amp; emission rights trading</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> </ul> <p><u>Week 2</u></p> <p><b>MARKETS &amp; ORGANISATIONS</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Stakeholders – The roles of market participants, brokerage firms, trading venues, clearing organisations, system operators, policy makers, regulators, and their relations / interactions.</li> <li>▪ Industry bodies.</li> <li>▪ The trade organisation: business, control and support functions.</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Commodity markets</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 3</u></p> <p><b>TRADING</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Why, where, when and how does trading take place?</li> <li>▪ Bilateral deal-making versus exchange trading.</li> <li>▪ The role of brokers, exchanges, clearing houses, clearing members and fee structures.</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Reasons to transact</li> <li>• Bilateral deal-making &amp; OTC markets</li> <li>• Exchange-trading</li> <li>• OTC trading platforms</li> <li>• Central orderbook</li> <li>• Order types</li> </ul> </li> </ul> </li> <li>○ Competence Trainer (Simulation Platform): <ul style="list-style-type: none"> <li>▪ Run a simulation:</li> </ul> </li> </ul> </li> </ul> |
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|  | <ul style="list-style-type: none"> <li>• Market analysis</li> <li>• Screen-based trading</li> <li>• Financial performance (P/L)</li> <li>• Central order book – Order initiation</li> </ul> <ul style="list-style-type: none"> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervision Group – “Markets &amp; Trading”</li> <li>○ Attend Intervision Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 4</u></p> <p><b>CONTRACTS</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Supply contracts – Volume &amp; price</li> <li>▪ Supply contracts – Take-or-pay, volume flexibility, swing optionality.</li> <li>▪ Spot &amp; forward contracts</li> <li>▪ Derivative contracts – Futures, swaps and options.</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Derivatives – Introduction</li> <li>• Derivatives – Position management</li> <li>• Forward curves</li> <li>• Options – Introduction</li> </ul> </li> </ul> </li> <li>○ Competence Trainer (Simulation Platform): <ul style="list-style-type: none"> <li>▪ Run a simulation: <ul style="list-style-type: none"> <li>• Futures – At position level</li> <li>• Futures – At portfolio level</li> <li>• Options – Call option</li> <li>• Options – Put option</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervision Group – “Markets &amp; Trading”</li> <li>○ Attend Intervision Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 5</u></p> <p><b>PRICING &amp; ANALYTICS</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Price discovery &amp; the role of price reporting agencies.</li> <li>▪ Market analysis.</li> <li>▪ Price formation – Driving factors, central order book and order flow.</li> <li>▪ Indexes, indexation, benchmarks and settlement prices.</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Commodity pricing</li> <li>• Commodity indices &amp; price-indexation</li> <li>• Price volatility</li> </ul> </li> </ul> </li> <li>○ Competence Trainer (Simulation Platform): <ul style="list-style-type: none"> <li>▪ Run a simulation: <ul style="list-style-type: none"> <li>• Forward curve</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervision Group – “Markets &amp; Trading”</li> <li>○ Attend Intervision Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> </ul> |
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|  | <ul style="list-style-type: none"> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week's assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 6</u></p> <p><b>CONTRACT MANAGEMENT</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Master agreements</li> <li>▪ Credit support – CSAs</li> <li>▪ Supply contracts</li> <li>▪ Power purchase agreements (PPAs)</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Master agreements</li> <li>• PPAs</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week's assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 7</u></p> <p><b>RISK MANAGEMENT</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Market (price) risk &amp; market (price) risk management</li> <li>▪ Counterparty risk &amp; credit risk management</li> <li>▪ Liquidity risk &amp; liquidity risk management</li> <li>▪ Compliance risk &amp; compliance risk management</li> <li>▪ Operational risk &amp; operational risk management</li> <li>▪ Mandates &amp; limit settings</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study: <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”: <ul style="list-style-type: none"> <li>▪ Follow course: <ul style="list-style-type: none"> <li>• Risk &amp; opportunity</li> <li>• The risk management organisation</li> <li>• Value at risk</li> <li>• Weather risk</li> </ul> </li> </ul> </li> <li>○ Competence Trainer (Simulation Platform): <ul style="list-style-type: none"> <li>▪ Run a simulation: <ul style="list-style-type: none"> <li>• Exposure assessment</li> <li>• Value at risk</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions: <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment: <ul style="list-style-type: none"> <li>○ This week's assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 8</u></p> <p><b>REGULATION &amp; COMPLIANCE</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Market regulations</li> <li>▪ Trade compliance – Shielding employer &amp; employees</li> <li>▪ Reputational risk management &amp; sanctioning</li> </ul> <p>In addition, the candidate is supposed to:</p> |
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|  | <ul style="list-style-type: none"> <li>▪ Perform self-study:             <ul style="list-style-type: none"> <li>○ Learning Platform – “Trade Compliance &amp; Surveillance”:                 <ul style="list-style-type: none"> <li>▪ Follow course:                     <ul style="list-style-type: none"> <li>• Trade compliance – The basics</li> <li>• Morality</li> <li>• Ethical blindness</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions:             <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment:             <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 9</u></p> <p><b>FINANCIAL CRIME &amp; MARKET ABUSE</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Money laundering, bribery, VAT fraud, insider trading and market manipulation</li> <li>▪ KYC</li> <li>▪ Market monitoring &amp; trade surveillance</li> <li>▪ People, systems &amp; arrangements</li> <li>▪ Case handling</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study:             <ul style="list-style-type: none"> <li>○ Learning Platform – “Trade Compliance &amp; Surveillance”:                 <ul style="list-style-type: none"> <li>▪ Follow course:                     <ul style="list-style-type: none"> <li>• Introduction to financial crime</li> <li>• Money laundering</li> <li>• Terrorist finance</li> <li>• Bribery</li> <li>• Financial fraud</li> <li>• Tax fraud</li> <li>• Employee fraud</li> <li>• Market abuse</li> <li>• Surveillance – Financial crime – A holistic approach</li> <li>• Trade surveillance – The basics</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions:             <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment:             <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 10</u></p> <p><b>TRADING OPERATIONS – CLEARING &amp; SETTLEMENT</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Trade confirmations</li> <li>▪ Clearing             <ul style="list-style-type: none"> <li>○ Risks involved with CCP’s and clearing banks</li> <li>○ Accounts and related risks (individual segregated, omnibus)</li> <li>○ Default fund, defaults and close outs</li> <li>○ Collateralisation &amp; margining</li> </ul> </li> <li>▪ Settlement</li> <li>▪ The nomination process</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study:             <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”:                 <ul style="list-style-type: none"> <li>▪ Follow course:                     <ul style="list-style-type: none"> <li>• Clearing</li> <li>• Netting</li> <li>• Margining</li> </ul> </li> </ul> </li> </ul> </li> </ul> |
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|  | <ul style="list-style-type: none"> <li>• Settlement</li> <li>○ Competence Trainer (Simulation Platform):       <ul style="list-style-type: none"> <li>▪ Run a simulation:           <ul style="list-style-type: none"> <li>• Margin requirements</li> <li>• Futures – At position level</li> <li>• Futures – At portfolio level</li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions:       <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment:       <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 11</u></p> <p><b>FINANCE &amp; QUANTITATIVE ANALYSIS</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Mark-to-market (M-to-M) valuation &amp; reporting</li> <li>▪ Book structures</li> <li>▪ Internal transfers &amp; internal transfer pricing</li> <li>▪ Performance measures</li> <li>▪ Physical assets &amp; gross margins</li> <li>▪ Time, location and cross-commodity spreads</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study:       <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”:           <ul style="list-style-type: none"> <li>▪ Follow course:               <ul style="list-style-type: none"> <li>• Flexibility</li> <li>• Modelling</li> <li>• Spreads &amp; spread trading</li> </ul> </li> </ul> </li> <li>○ Simulation Platform – Entrima:           <ul style="list-style-type: none"> <li>▪ Run a simulation:               <ul style="list-style-type: none"> <li>• Gas – Location spread</li> <li>• Gas – Time spread</li> <li>• Power – Spark spread</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions:       <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment:       <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 12</u></p> <p><b>ICT</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Trading tools &amp; technology</li> <li>▪ Trading &amp; risk management (TRM) systems</li> <li>▪ Data &amp; systems</li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Perform self-study:       <ul style="list-style-type: none"> <li>○ Learning Platform – “Markets &amp; Trading”:           <ul style="list-style-type: none"> <li>▪ Follow course:               <ul style="list-style-type: none"> <li>• Trading &amp; risk management systems</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Follow Mentoring sessions:       <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Hand-in group/individual assignment:       <ul style="list-style-type: none"> <li>○ This week’s assignment</li> <li>○ Learners will be provided feedback regarding the previous assignment</li> </ul> </li> </ul> <p><u>Week 13</u></p> |
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|---------|---|
|         | <p><b>ASSIGNMENTS</b></p> <p>This module covers a 1-day online workshop covering the following topics:</p> <ul style="list-style-type: none"> <li>▪ Group assignment             <ul style="list-style-type: none"> <li>○ Document</li> <li>○ Present</li> </ul> </li> <li>▪ Individual task             <ul style="list-style-type: none"> <li>○ Document</li> <li>○ Present</li> </ul> </li> </ul> <p>In addition, the candidate is supposed to:</p> <ul style="list-style-type: none"> <li>▪ Follow Mentoring sessions:             <ul style="list-style-type: none"> <li>○ Attend Intervention Group – “Markets &amp; Trading”</li> <li>○ Attend Intervention Group – “Trade Compliance &amp; Surveillance”</li> </ul> </li> </ul> <p><i>Week 14-51</i></p> <p><b>SELF-STUDY &amp; MENTORING</b></p> <p>This module requires candidates to do the following:</p> <ul style="list-style-type: none"> <li>▪ Perform <b>Self-study</b> <ul style="list-style-type: none"> <li>○ Run simulations on Simulation Platform</li> <li>○ Attend courses &amp; take exams (and be certified) on Learning Platform – “Markets &amp; Trading”</li> <li>○ Attend courses &amp; take exams on Learning Platform – “Trade Compliance &amp; Surveillance”</li> </ul> </li> <li>▪ Attend <b>Mentoring</b> services             <ul style="list-style-type: none"> <li>○ Attend weekly sessions Intervention Group “Markets &amp; Trading” + Participate ongoing in community</li> <li>○ Attend weekly sessions Intervention Group “Trade Compliance &amp; Surveillance” + Participate ongoing in community</li> </ul> </li> </ul> <p><i>Week 52</i></p> <p><b>DIPLOMA</b></p> <p>This module covers a 1-day meeting.<br/>This is the last building block of the learning journey by handing the diploma, thereby formalising and finalising the programme.</p> |
| Options | Further tailoring for in-house delivery is possible   |
| Level   | Foundation level  |

**APPENDICES**  
*RELEVANT DETAILS*

## APPENDIX I: HANDBOOKS

Entrima has published a series of handbooks for professionals in the financial and physical markets (capital, commodity and energy markets) has been developed. The list below reflects a selection of the titles which are covered by the collection:

1. **Commodity & energy markets** – From a physical & financial perspective
2. **Commodity & energy trading** – Fundamentals of trading, the trading organisation, trading technology and trading strategies
3. **Bilateral deals & OTC trading** – About terms & conditions, master agreements, brokerage services, counterparty risk, credit support and credit limits
4. **Clearing & Settlement** – Trading operations, margining, physical delivery and cash settlement
5. **Value at Risk** – Price volatility, stress tests, mandates & limit structures
6. **Flexibility & Optionality** – Outright & real options across commodity & energy portfolios
7. **Futures** – About contract specifications, pricing, clearing, margining & settlement
8. **Options** – About calls & puts, the premium, risk-reward ratios and the Greeks
9. **Swaps** – About interest rate swaps, FX swaps & commodity swaps
10. **Spreads & spread trading** – Time, location & cross-commodity spreads
11. **Freight** – About vessels, routes, chartering, incoterms & freight derivatives
12. **Oil** – The value chain, plus oil markets, products, pricing & trading
13. **Value at Risk** – Price volatility, stress tests, mandates & limit structures
14. **Hedging** – Market risk mitigation tools, strategies and techniques
15. **Asset-backed trading** – Hedging physical assets and supply contracts
16. **Weather derivatives** – Weather elements, data, exposures & hedging tools
17. **Trading psychology, behaviour & conduct** – The decision making process & performance management – Culture, ethics & integrity
18. **Monitoring & Surveillance** – Preventing market abuse & identifying suspicious trading behaviour
19. **REMIT** – A practical, non-legal approach [to market abuse regulation]
20. **MAR** – An explanation in minimum legal terms [to market abuse regulation]
21. **Misconduct at work** – About business integrity, behaviour and ethical blindness
22. **Senior Managers and Certification Regime** – About accountability, certification, conduct rules & culture

## APPENDIX II: OUR EDUCATIONAL SERVICES

Entrima provides the following educational services:

- **Self-study:**
  - Learning Licence – Learning Platform – “Markets & Trading” (*learning-by-watching*) ([Guide](#))
  - Learning Licence – Learning Platform – “Trade Compliance & Surveill” (*learning-by-watching*) ([Guide](#))
  - Simulation Licence – Simulation Platform – [Competence Trainer](#) (*learning-by-doing*)
  
- **Intervision** (*building expertise while being guided*):
  - Intervision Licence – [Membership](#) – “Markets & Trading” (*learning-by-interacting*) ([2024 agenda](#))  
(*weekly sessions + membership to community + ongoing chat*)
  - Intervision Licence – [Membership](#) – “Trade Compliance & Surveil.” (*learning-by-interacting*) ([2024 agenda](#))  
(*weekly sessions + membership to community + ongoing chat*)
  
- **Live-tutoring:**
  - Public courses (online & on-site)
  - In-company workshops (online & on-site) (*customised programmes*)

## **CONTACT DETAILS**

Website  
[www.entrime.org](http://www.entrime.org)

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